THE MAPPING OF OUR NATIONAL FORESTS

By Peter L. Stark

This essay was written during my term as a Grey Tower Scholar-in-Residence in the Winter of 2014, supported by a generous research grant awarded by the Grey Towers Heritage Association.

Brief excerpts of copyright material found herein may, under certain circumstances, be quoted verbatim for purposes such as criticism, news reporting, education, and research, without the need for permission from or payment to the copyright holder under 17 U.S.C § 107 of the United States copyright law. Copyright holder does ask that you reference the title of the essay and my name as the author in the event others may need to reach me for clarification, with questions, or to use more extensive portions of my reference work. Also, please contact me if you find any errors or have a map that has not been included in the cartobibliography

THE MAPPING OF OUR NATIONAL FORESTS

By Peter L. Stark

CONTENTS

Part I Mapping of the National Forets……..… 3

1. Early U.S. General Land Office Mapping…… 6
2. U.S. Geological Survey Mapping, 1897-1905……..6
3. Proclamation Diagrams and Executive Order Maps……..…9
4. "Type & Title" Mapping by the U.S. Department of Agriculture……12
5. Forest Atlas of the National Forests of the United States…….....13
6. The decentralized administrative organization and its effect on early Forest Service mapping……..20
7. Defining a Cartographic Program: Forest Service Mapping, 1910-1922…….....21
8. Forest Service Mapping Between the Wars, 1922-1941……...32
   - A. Topographic Mapping……..34
   - B. The Beginnings of the Forest Service Aerial Photography Program……35
   - C. Maps for the Forest Visitor…….. 38
   - D. Recreation Maps and Map Booklets…….40
   - E. Two Noteworthy Forest Service Illustrators…….41
9. Cartographic Contributions made by the Forest Service in World War II, 1942-1945…….. 47
10. A New Generation of Mapping, 1946-1975……48
11. Into the Future……..53

Part II Map Distribution and Map Collections……..54

1. The Perspective of the Forest Service…….……..55
2. The Role of the Government Printing Office……... 57
3. Forest Service Maps in Libraries……. ……58

Part III The Cartobibliography, Citation Key, and Index to Cartographers……...59

1. Scope and Arrangement…….……...59
2. Use…..…….…….…… 61
3. Sample Map Entry…… 61
4. Index to Cartographers as Found on Forest Service Maps…….…...64

Part I. The Mapping of the National Forests[1]

> *"Accurate maps of the national forests are essential to every activity conducted by the service*."
> ---Forester William B. Greeley, 1922[2]

A very strong connection exists between a forest's administrative history and its map record, which compellingly argues in favor of linking a forest's history to its cartography. In one example in Arizona, on January 23, 1925, President Calvin Coolidge signed presidential proclamation No. 1728 that transferred the southern half, or the Clifton Division, of the Apache National Forest to the Crook National Forest. The proclamation also reassigned the northern portion of the Datil National Forest in New Mexico to the Apache, or the area now referred to as the Quemado Ranger District. This action immediately rendered the existing maps of the Apache National Forest obsolete and led to the compilation of new maps. The first new map issued was the one that accompanied the text of Presidential Proclamation 1728, or the "Diagram forming part of Proclamation 1728" at 1:253,440-scale, which was closely followed by new administrative maps dated 1925 and 1926 as well as a 1926 forest visitor map. This 1925 boundary change was the most significant event in the Apache National Forest's history since its establishment in 1908 and maps produced by the Forest Service, both before and after 1925, document this important land exchange between three national forests. Maps illustrate and explain and therefore should be linked to the administrative history of the National Forest System.

Significantly, it was a Forest Service cartographer, Salvatore Lo Jacono, who, nearing the end of his 40-year career with the Engineering Division, compiled the first reference work covering the administrative history of the national forests. His work recorded official government actions that established, modified, or altered the status and the boundaries of individual forest reserves and national forests. His 1959 work, *Establishment and Modification of National Forest Boundaries: A Chronological Record, 1891-1959* has been recognized by the Forest Service as a valuable resource by the fact that the title has been maintained and reissued ever since 1959, first by the Engineering Division and later by the Lands Staff of the Forest Service. Lo Jacono's cartographic experience over the course of his long career led him to recognize the need for and the importance of a convenient reference work detailing the changes in names and boundaries of the many units in the National Forest System. By combining the administrative history of each national forest with a map listing for each forest reserve and national forest enhances the usefulness of Lo Jacono's original work. This is what has been done as found in the Regional Chapters in this reference work.

In addition to documenting administrative changes, Forest Service maps are essential to the understanding of environmental and human history of the national forests because both physical and cultural features change over time. For example, the construction of Libby Dam on the Kootenai River flooded an entire river valley and forced the relocation of people, roads, and railroads. The physical as well as administrative features surrounding Mt. St. Helens are quite different now than before the 1980 eruption. Older maps can show what the land looked like and in some instances, the forest cover at a particular point in time. Vintage Forest Service maps have been used to locate old forest lookouts, abandoned CCC camps, public roads that over time became private and gated, logging railroads and their names, resorts and ranches that have come and gone, mines, and pioneer trails. Old forest names appear

[1] When addressing the Regions of the Forest Service, the term used to describe the administrative units will be the one that was used at the time being examined in the essay. When discussing maps issued until 1919, "District" with its numerical designation will be used; from 1919 to 1929, the name of the District, such as the "Alaska District" and/or its numerical designation will be used; after 1929, "Region" will be used along with its name, such as the Eastern Region and/or its numerical designation.

[2] William B. Greeley, *Report of the Forester,* (Washington: Government Printing Office, 1922), p. 43.

on U.S. Geological Survey topographic and other federal maps as well as commercially produced maps of the same era. Knowing the administrative history of a forest will help determine the publication dates of commercial maps that were often published without them. Forest Service maps can show the beginnings and expansion of special areas, such as national monuments, primitive, wild, and wilderness areas, recreation areas, and experimental forests. Boundaries and names of special areas and ranger districts have changed just as much as the names of the national forests have. Maps record those changes.

The monumental task of mapping the millions of acres in the new forest reserves was begun by the U.S. General Land Office and continued after 1897 by the U.S. Geological Survey under a congressional mandate and appropriations. Even with this beginning, drawing boundaries and evaluating the new forest reserves remained an enormous challenge awaiting Gifford Pinchot's Forest Service when it was created in 1905 to manage the forest reserves. Initially, the Forest Service was dependent on the mapping produced by the federal government dating as far back to the four great post-Civil War Surveys of the West[3] (1867-1879) as well as the General Land Office and the Geological Survey. Thus, the early maps and atlases produced by the Forest Service were largely derivative in nature, or compilations from previous maps with very little new information except what was supplied by Forest Service staff from the field. Map accuracy was also dependent upon these earlier maps. With the introduction of aerial photography for mapping and resource management in the late 1920s early 1930s, the derivative period of Forest Service mapping ended. Aerial photography, together with the technology and equipment necessary to process images, allowed the agency to make its own original and highly accurate maps from its own reliable base data.

The decentralized nature of the Forest Service led to many differences between regions in the appearance of the maps issued for the public. However, for administrative mapping, there were standards, which were uniformly applied throughout the cartographic history of the Forest Service. Diversity at the regional level led to an innovative program of forest visitor map production in the California Region from 1911 to 1918 and also allowed the Northern Region to improve upon the folios of the *Forest Atlas of the National Forests of the United States* through the addition of topography to the atlas sheets. Centralizing influences guaranteed that these regional initiatives met certain system-wide standards. The interplay of these two dynamic forces within the Forest Service is well illustrated through an examination of the agency's mapping program.

The course taken by Forest Service cartography closely follows larger 20th century trends in map making and use. Already mentioned is the change brought about by gathering map data from above through overhead imaging from aerial photography and remote sensing. This technological advance was fostered by the exigencies of the first and second World Wars and point to the link between warfare and advances in cartography. During the past century, maps were increasingly used as tools of public administration. From managing the national forests to managing large urban programs of zoning, land valuation, transportation, and public utilities, governments became ever more dependent on maps. Maps were also serving a widening array of day-to-day roles in people's lives. New purposes include the rise of the road map and aeronautical chart to serve travelers in the land and air, weather maps to predict weather conditions, and maps for outdoor recreation. The new purposes to which maps were put also highlight the democratization of cartography itself. To varying degrees, the mapping program of the Forest Service participated in all of these cartographic themes of the 20th century, including perhaps the largest of all, the transition to computerized cartography.[4]

---

[3] U.S. National Park Service, *Exploring the American West, 1803-1879,* (Washington: Government Printing Office, 1982), pages 83-99. These pages provide an excellent overview of the Great Post-Civil War Surveys of the American West.

[4] These themes were enunciated by Professor Mark Monmonier, Syracuse University, at a keynote address, May 15, 2014 at

The major responsibilities of the National Forest System are to protect, manage and develop the natural resources of all System lands, to actively cooperate with other federal, state, local, and private interests in the practice of good forest, grassland, and range conservation, and to conduct research directed toward more efficient management, protection, and use of the renewable resources of timber, grass, wildlife, and water as well as recreation on System lands. Mapping the land base of the National Forest System is largely a supportive activity to these major responsibilities, and, over the years, has not been given the scholarly attention that the other areas of study have had, such as forest management policy, fire protection, and silviculture. There have been many histories of the Forest Service at the national, regional, individual forest, and even at the ranger district level, but none of these have addressed Forest Service cartography or the cartographers that have been engaged in this vital function. The reason may be the stunning lack of original source material documenting Forest Service cartography. Outside of an reasonably adequate collection of letters and documents covering the early efforts to compile the *Forest Atlas of the National Forests of the United States* for each of the national forests between the years 1906-1910, the National Archives and Records Administration holds very little that documents Forest Service map standards, procedures, publishing, printing, and policies governing the making and distribution of Forest Service mapping from the agency's Engineering Division. What is available to the researcher from the National Archives is a very large and significant gathering of Forest Service maps. This fact points to a fundamental aspect of the following introduction to Forest Service cartography: it is largely based on the actual cartographic production of the Forest Service as well as any and all text and hand-made annotations found on the maps themselves and whatever primary and secondary supporting materials that have been uncovered.

There has been a great deal of time, expertise, and funds expended over many years to establish the Public Land Survey System points of reference and land lines in the national forests. Cadastral surveying is an extremely important part of the Forest Service cartography program. Much effort has also been made at the regional level in the making of operational maps for timber sales, fire management, road construction, environmental and recreation planning. However, the guiding principal behind this listing of maps and this essay on Forest Service cartography is that the maps being listed and discussed are ones that are generally available to the public and are found in research libraries, archives, and other repositories. With this in mind, some space has been devoted here to explain how Forest Service mapping has been distributed over the years to the public as well as to libraries.

The cartobibliography that follows each Forest Reserve and/or National Forest in each Regional Chapter is arranged in chronological order, but with the very important exception that the maps most associated with the forest's administrative history, those that accompanied presidential proclamations and executive orders, will appear first, immediately below that history. Following these are any maps published by the U.S. General Land Office when that agency was administratively responsible for the forest reserves, or the years 1891-1905. Of course, only the earliest forest reserves will have maps issued by the G.L.O. Also, only the earliest of forest reserves will have maps compiled and published by U.S. Geological Survey, the next group of maps to follow G.L.O. mapping. Moving forward in time, the cartobibliography presents citations for the forest atlases produced for that forest followed by general Forest Service administrative and forest visitor mapping produced after 1905. Because of constant reorganization of the forest reserves and national forests in their first 75 years, users are encouraged to follow the histories of newer national forests of today back to their predecessor forests and to follow forests established before1908 forward to discover additional cartographic resources for a particular land area.

---

the Library of Congress, as part of the program, *"From Terra to Terabytes: The History of 20th Century Cartography and Beyond."* They can also be found in Volume 6, "Cartography in the Twentieth Century" edited by Mark Monmonier and published in 2015 by the University of Chicago Press, part of the monumental "The History of Cartography" project.

1. Early U.S. General Land Office Mapping

The General Land Office, because of its authority over the public lands, made the first maps of the forest reserves. These were compiled from the bureau's principal cartographic product, the 1-mile to 1-inch township plat. The G.L.O. maps covering the forest reserves during the decade of the 1890s into the first years of the new century were few in number and drawn at a small-scale. These G.L.O. maps were later used extensively as in-house base maps by the U.S. Geological Survey and the Forest Service in tracking boundary changes and for constructing thematic maps, such as timber type and timber density maps. The National Archives and in some cases, regional Forest Service offices hold examples of these maps today. There is little evidence that General Land Office maps of the Forest Reserves were distributed to libraries or to the public. Research institutions have cataloged very few. Base maps of the forest reserves compiled by the G.L.O. appear in the cartobibliography section immediately following the maps illustrating Presidential Proclamations and Executive Orders. The Division "E" or the Surveying Division of the General Land Office produced the maps for Division "P" the Special Services Division. Later, in 1901, the Special Services Division was renamed the Forestry Division.

The state maps issued irregularly by the General Land Office (known as the Bureau of Land Management since 1946) to show the progress of public land surveying, important federal land withdrawals, administrative organization, and growth of the territorial or state infrastructure, can prove to be important spatial records for the researcher in the history of the national forests. The G.L.O. state maps show military and Indian reservations in red and yellow respectively, national parks, monuments, and game and bird refuges in purple, and water features and federal water projects in blue. Federal forests are shown in green while state and county boundaries, status of public land surveys, towns, and cities, locations of United States land offices, roads and railroad lines are rendered in standard black. These state maps, issued up to 1944, provide a unique and essential state context for the national forests that maps of individual national forests lack. In some instances, they can be the only cartographic representation of a few, early, short-lived forest reserves, such as New Mexico's Portales National Forest. Many research libraries have cataloged these state maps, which would indicate that these maps were widely distributed. These important state maps are listed in the cartobibliography as Part II.

2. U.S. Geological Survey Mapping 1897 to 1905

One of the many recommendations issued by the National Academy of Sciences Commission in its final report on a forest policy for the United States dated May 1, 1897, was that the U.S. Geological Survey be charged with surveying the forest reserves with an eye towards discovering which lands should be eliminated and which lands should be included in the nation's forest reserves. The Commission noted: "Only a small portion of the White River Plateau Timber Land Reserve in Colorado…is forest land, the remainder being covered with grasses and scattered clumps of oak bushes. Such land is, of course, most valuable for pasturage and its withdrawal from use cripples the important cattle industry of the region." [5] Such lands better suited for economic pursuits other than forestry, the Commission members believed, should be eliminated from the forest reserves. The Commission thought that the U.S. Geological Survey was the only federal bureau at the time capable of performing such surveys and that the agency should be appointed with an adequate budget to map and inventory the forest reserves. This recommendation found

[5] National Academy of Sciences, *Report of the Committee appointed by the National Academy of Sciences upon the Inauguration of a Forest Policy for the Forested Lands of the United States*…, (Washington: Government Printing Office, 1897, p. 27.

its way into the Sundry Civil Appropriations Act of June 4, 1897 for the year ending June 30, 1898. The Geological Survey was charged with evaluating and mapping the forest reserves and given an annual appropriation of $150,000 to do so.

A year later, on July 18, 1898, the Director of the U.S. Geological Survey, Charles D. Walcott, officially transmitted for publication as Part 5 of the Survey's *Nineteenth Annual Report, 1897 – '98*, a 400-page volume on "Forest Reserves" with 110 maps and a large number of photographs. For the next two years, the U.S. Geological Survey's substantial *Annual Report* included a Part 5 devoted to an examination of the Forest Reserves. The maps from these annual reports are listed whenever possible under the Forest Reserve in the cartobibliography under "U.S. Geological Survey Mapping" and include both loose maps included in an accompanying map case to Part 5 as well as those bound into the text volume of the report. Maps with state or regional coverage are listed under a section on maps of the Forest Service region. Each report also comes with a detailed text and black & white photographs that are supplemented by the maps. The text of these reports tends to be organized around the standard 36 square mile township with a description of the timber resources in that township, an organizing principal continued by Gifford Pinchot's Forest Service in his *Forest Atlas of the National Forests of the United States.*

After the publication of its *Twenty-First Annual Report, 1899 – 1900,* the Geological Survey's examinations and mapping of the forest reserves found a new outlet in the Survey's *Professional Papers* series, launched in 1902. Thirteen early numbers of *Professional Papers* were dedicated to an assessment of the forest conditions found in states, regions, and for individual forests between 1902 and 1905. For instance, in the Northern Region, *Professional Paper No. 29* and *Professional Paper No. 30*, both issued in 1904, examined the Absaroka and the Little Belt Mountains Forest Reserves respectively in Montana. Maps illustrating these reports are found under these two forest reserves.

The thematic maps produced by the U.S. Geological Survey in both its *Annual Reports* and its *Professional Papers* series, often become separated from their parent publications, and so, it is hoped that by providing full citations for each map and including in that citation a full description of the parent report, a researcher can, if necessary, unite map with text. Much of the color thematic data found in the forestry reports of the U.S. Geological Survey as well as the topographic information later made its way onto the future pages of the *Forest Atlas* series.

The Geological Survey left a large and remarkable body of written, photographic, and cartographic work on the early forest reserves for today's researcher. The bureau's forest mapping legacy is listed in its entirety organized within each Regional Chapter. Henry Gannett, in charge of the U.S. Geological Survey's Division of Geography and Forestry summarized his Division's efforts in the agency's 1905/06 annual report:

> "During the spring [of 1905] the work of examining forest reserves, etc., together with the men employed upon it, was transferred to the Bureau of Forestry of the Department of Agriculture. As this closes the work of the Geological Survey in the examination of forest lands, it may be well to make a brief résumé of the results accomplished. The work was committed to this office by act of Congress in 1897, and has therefore been carried on for eight years."[6]

Gannet then provides a state by state listing of the 34 forest reserves that had been examined and which had reports written as well as the often expressed lament that: "The names [of the forest reserves] given above are in most cases those which were in use at the time of the examinations. Many of them have

[6] Henry Gannett, *Twenty-Sixth Annual Report of the Director of the U.S. Geological Survey to the Secretary of the Interior for the fiscal year ending June 30, 1906.* (Washington: Government Printing Office, 1906), p. 159-160.

since been changed through consolidation."[7] He continues, "Besides these reserves, large areas were examined with a view to the formation of new reserves or their inclusion in existing reserves. The total area examined during the eight years amounts to 110,000 square miles."[8]

Even after the transfer of responsibility for mapping the forest reserves to the Forest Service in 1905, the Geological Survey continued to make mention in its annual reports where topographic surveys were being conducted in areas wholly within the forest reserves and in areas where the U.S. Geological Survey was engaged in forest boundary surveys. The Survey's 1906/07 annual report, for instance, noted that topographic surveys were being conducted on the Priest River Reserve in Idaho, the Hellgate Reserve in Montana, and for a proposed reserve in Idaho in that state's Kootenai and Shoshone counties, along with describing topographic work accomplished in several other western states.[9] These surveys later resulted in the publication of topographic quadrangles by the Geological Survey, conforming to the geographic grid and not to forest reserve boundaries. Along with its topographic work, the Geological Survey was also instrumental in surveying and marking the boundaries of the Forest Reserves. Such boundaries later appeared as important lines on the agency's published topographic maps and on Forest Service maps as well. Henry Gannett, writing in the 1906/1907 annual report, stated that during the past year, one of his duties as Chief Geographer of the U.S. Geological Survey was "Assisting the Forest Service, particularly in matters relating to geography and topography and in the organization of its reserve force."[10] Also, Henry Gannett was assisting Gifford Pinchot, F. E. Olmstead, and Coert DuBois in organizing the western forest reserves into administrative districts also called "inspection" districts, the precursors of the Forest Service regional organization.

The Geological Survey's *Annual Reports* and *Professional Paper* series are readily available in most major university, public libraries, and state historical societies. These book publications were widely distributed through the Government Printing Office's depository library system as well as included in the Serial Set of United States government publications.[11]

[7] Ibid, p. 160.
[8] Ibid, p. 160. 110,000 square miles = 70,400,000 acres.
[9] U.S. Geological Survey. *Twenty-Seventh Annual Report of the Director of the U.S. Geological Survey to the Secretary of the Interior for the fiscal year ending June 30, 1907.* (Washington: Government Printing Office, 1907) 50.
[10] Ibid, 54.
[11] See the excellent index to all maps included in the Serial Set, including forest maps by the Geological Survey, *CIS US Serial Set Index, Part XIV, Index and Carto-Bibliography of Maps, 1789-1969*, edited by Donna P. Koepp, (Silver Spring, Md.: Congressional Information Service, 1995).

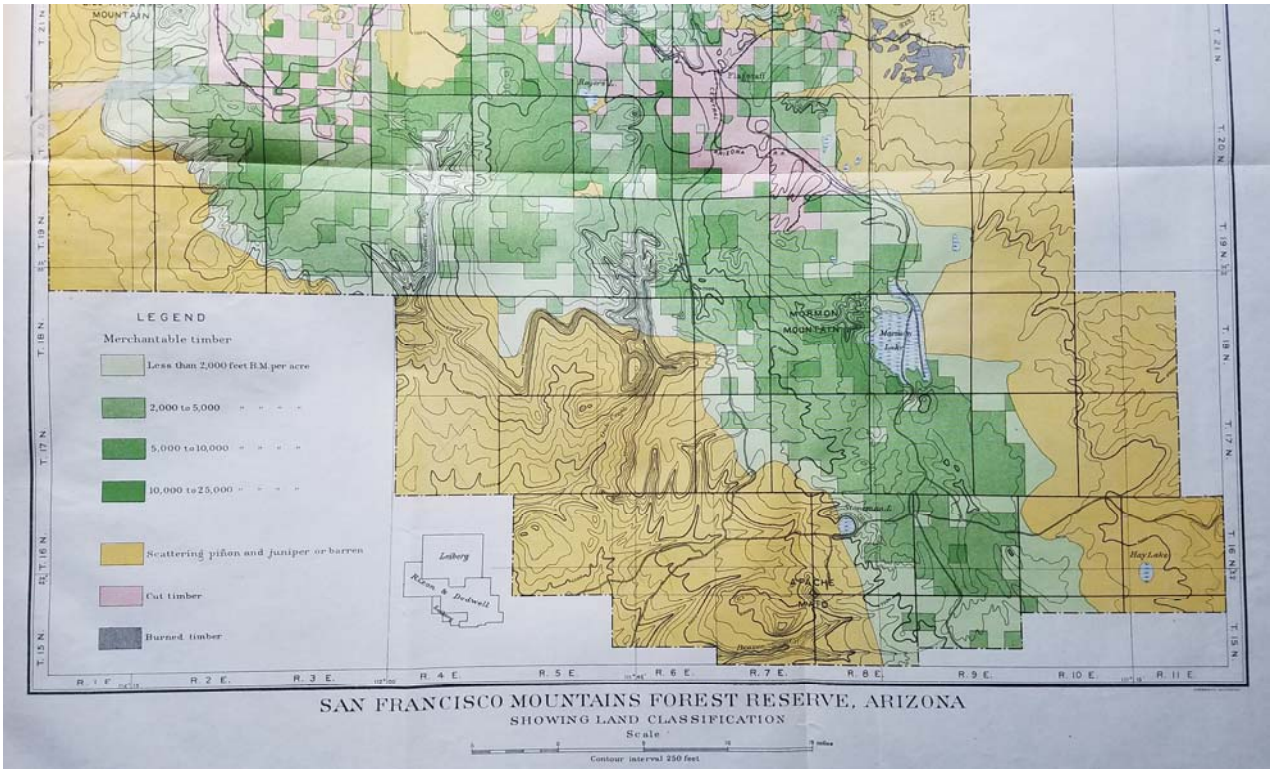

Illustration 1*:* Southern portion of the Plate 1 "Map of San Francisco Mountains Forest Reserve, Arizona, showing land classification" made to illustrate, Leiberg, John B., Theodore F. Rixon, and Arthur Dodwell, *Forest Conditions in the San Francisco Mountains Forest Reserve, Arizona.* (Washington, D.C.: Government Printing Office, 1904). U.S. Geological Survey Professional Paper No. 22. Data from this map (land classification, forest type and density, etc.) were later used for the prototype for the Forest Atlas of the National Forests of the United States series as described below. Flagstaff, Arizona can be found in the center of the map surrounded by pink or "Cut Timber" land classification.

3. Proclamation Diagrams and Executive Order Maps

Until the fall of 1905, the boundaries of newly created forest reserves were expressed in the text of the Presidential Proclamations according to the public land survey system of the General Land Office – numbered townships north and south, and numbered ranges east and west according to meridians and baselines established for the area by G.L.O. surveyors. These descriptions could be quite lengthy, some taking up to three or more pages. No map accompanied these early proclamations. However, Forest Service cartographers, retrospectively, took the public land descriptions from these proclamations and, by hand, drew boundaries and boundary changes onto copies of the early G.L.O. maps of the forest reserves, or onto G.L.O. state maps, and retained these maps in the agency's "Boundary Atlas" map files, now in the possession of the National Archives. President Theodore Roosevelt issued the first published presidential proclamation for a forest reserve with a "diagram" or map attached on October 12, 1905 creating the Jemez Forest Reserve in New Mexico, now the western portion of the Santa Fe National Forest. The addition of a map/diagram to the proclamation eliminated the need for the lengthy public land narrative description of the forest reserve boundary. General Land Office maps served as the base maps for these map/diagrams. Almost all of these early map diagrams were devoid of any detail, as in the 1905 example supplied below of the La Sal Forest Reserve along the Utah/Colorado border. Once the Forest Service initiated their own cartographic data gathering, later proclamation diagrams and executive order maps after the year 1908, include much more detail. After 1912, they are on a par with any separately published administrative forest map for the time. In two instances, proclamation diagrams compiled for California's Cleveland and Sierra National Forests dated 1915, showing land eliminations

were re-issued as folding forest visitor maps the same year. Presidential proclamations and their diagrams printed at a reduced size also appeared in the volumes of the *United States Statutes at Large*; texts and maps of presidential Executive Orders do not.

Citations found in the cartobibliography for maps ("diagrams") accompanying proclamations are for those that are separately published and not for those page-sized maps reprinted in the *U.S. Statutes at Large*. Executive order maps, since they were not reprinted in the *U.S. Statutes at Large,* are all described as issued. Early proclamation diagrams and executive order maps were prepared by the Forest Service, but engraved and printed by the U.S. Geological Survey in press runs of just over 1000 copies each. In a letter from the Geological Survey's Chief Engraver, Stephen J. Kubel to the Fred G. Plummer, the Forest Service's Geographer, dated July 6, 1908, Kubel informs Plummer that "The following sheets are printed and boxed, and are ready for shipment, 500 to go to the State Department and the balance to your office. Kindly have your wagon call for them as soon as possible."[12] The Department of State received 500 copies because it was the agency responsible for issuing and recording presidential proclamations and executive orders, and had, by 1907, established a formal numbering system for both kinds of presidential actions. The remainder of the print run was sent on to the U.S. Forest Service, often with an overage for waste of about 20 copies each.

As time went on, the number of maps illustrating presidential proclamations and executive orders fell dramatically, most likely due to cost. Their existence became the exception rather than the rule, quite unlike the early period between 1905-1920 when such maps accompanied just about every proclamation and the many executive orders. Most proclamations establishing new national forests in the east and south in the 1930s only had sketch maps to illustrate their boundaries or had reverted to a narrative of township, range, and section numbers in public land states to describe boundaries as in the period 1891 to 1905. A few proclamations simply noted that a map was on file in the offices of the Forest Service. When in 1942 the Public Land Order was initiated in lieu of presidential actions, accompanying maps vanished. Public land descriptions took their place. Proclamation diagrams and Executive Order maps are important early examples of Forest Service cartography that should not be overlooked by the researcher. They provide the first boundary information on newly established forests and indicate subsequent boundary adjustments as well as land eliminations and additions to existing forests to fulfill Forest Service policies. They should be used with the understanding that the public land survey system (PLSS) grid, on which they are based, were, in many instances, constructed by merely projecting the PLSS grid from known survey lines into mountainous and remote areas that had not yet been adequately surveyed by the General Land Office.

[12] Kubel to Plummer,, 1908, RG 95.4.1, Records of the Engineering Division, Forest Service.

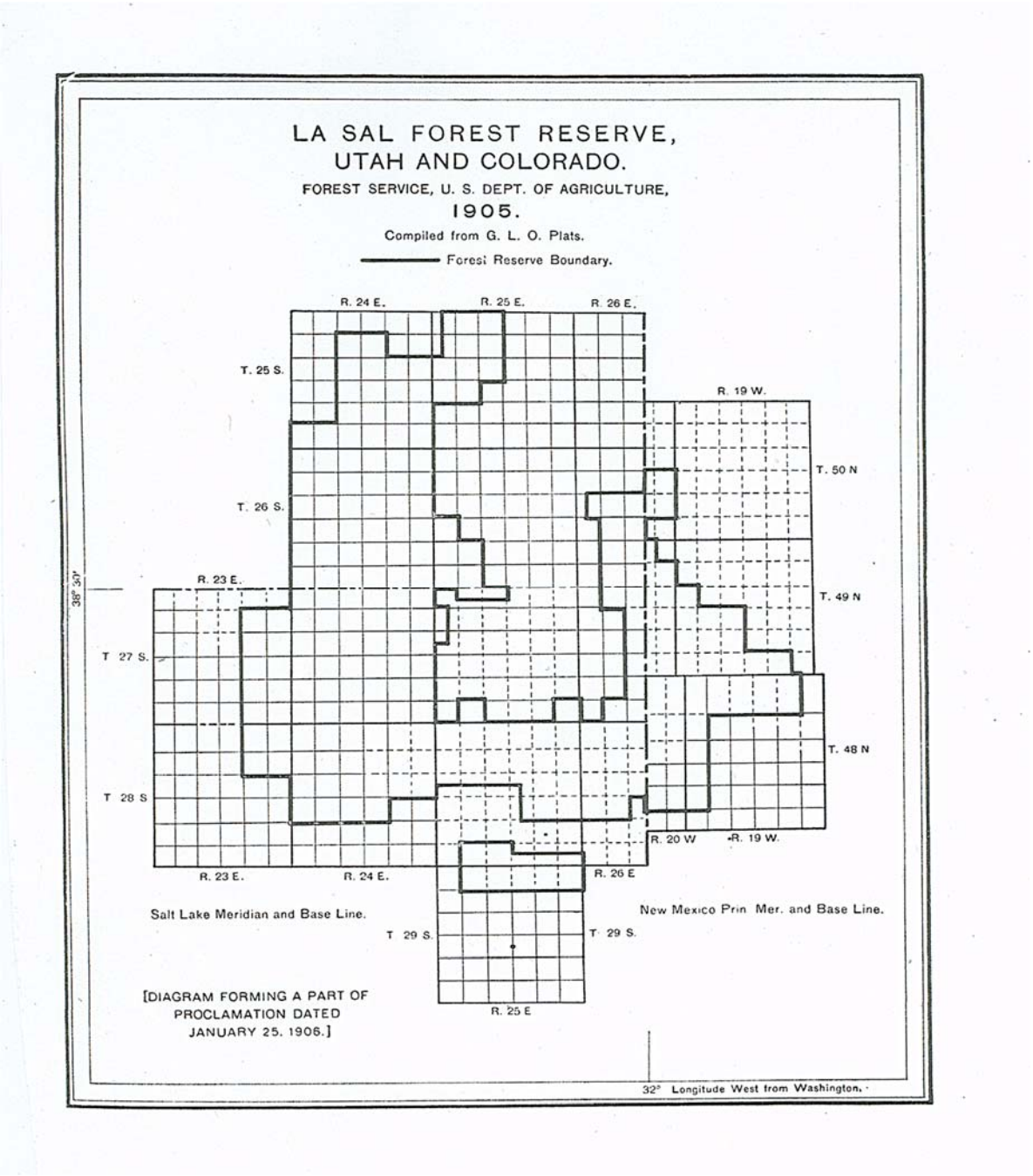

Illustration 2: Proclamation Diagram establishing the La Sal Forest Reserve in Utah and Colorado on January 25, 1906. The Forest Service compiled the map in 1905 by splicing together 18 General Land Office plat maps (1:63,360-scale plat maps covering 36 square miles, or one Township each). The entire Proclamation consisted of the "Diagram" and the text with the President's signature.

4. "Type & Title" Mapping by the U.S. Department of Agriculture

Pinchot wrote in the first edition of his "Use Book" that "In 1903, the need of better choice of reserve boundaries led to the establishment of a force of trained men devoted exclusively to this [boundary] work, under a uniform and complete system of field study and report. The results were satisfactory, and the system remains in effect. Before any new forest reserve is created, or any change is made in the boundary of an existing reserve, a member of the Forest Service familiar with the work and with western conditions makes a careful investigation not only of the lands, but also of the interests involved."[13] The "force of trained men" were of course the "Forest Arrangers" like Elers Koch, as described in the administrative history of the Forest Service as found on this web page. The Foresters in the Department of Agriculture's Division of Forestry (after 1901 the Bureau of Forestry) were responsible for examining the reserves. Establishing boundaries, evaluating resources, and investigating forested areas in the West for potential new forest reserves became a high priority for the Bureau headed since 1898 by Gifford Pinchot. Again, Pinchot: "Most of the forest reserves created since January 1, 1904, were examined and mapped by the Forest Service. These maps were made in duplicate on a scale of one-half inch to the mile [1:126,720-scale]. One showed the classification of lands and the other the patented and entered claims. These type and title maps, as they are called, will be furnished to every supervisor and as rapidly as possible to every ranger. Blank prints [without thematic information and used by rangers in the field] are available now for distribution among the reserve officers and the supervisor will be responsible that his rangers are furnished with adequate maps of their districts."[14] The type and title maps created by Pinchot's trained men were in almost every case, drawn on a General Land Office base annotated in applied color, as for example, these two manuscript maps held by the National Archives:

Bear Paw Forest Reserve, Montana.[15]
Forest Service, U.S. Dept. of Agriculture; base map in part from G.L.O. maps.
1904. Scale, ca. 1:126,720. No geographic coordinates. Public land (Township & Range) grid. Black & white. 38 x 43 cm. Relief shown by hachures.
Shows boundaries of the proposed Bear Paw Forest Reserve along with the boundaries of Fort Assiniboine Military Reservation, roads, trails, ranches, and streams. "Montana Principal Meridian." National Archives has two copies of this map both with hand-applied color showing, land use and vegetation (Type) on one map and, on the other, land ownership status (Title).

Most of these type and title maps of the forest reserves mentioned by Pinchot are found in the National Archives "Boundary Atlas" files. Many have hand drawn boundaries illustrating proclamations from this early (1891 to 1905) period. Each forest supervisor was given the responsibility to keep the type and title maps made for their forest up to date and report any corrections to the Washington office. These maps were never distributed to the public and so are quite difficult to locate, but their construction, the information they depicted, and the methods used to update them became the basis for the Forest Service's first major mapping project, the *Forest Atlas* series.

[13] U.S. Forest Service. *The Use of the National Forest Reserves: Regulations and Instructions*, Issued by the Secretary of Agriculture to take effect July 1, 1905. (Washington, D.C.: Government Printing Office, 1905), p. 96.
[14] U.S. Forest Service. *The Use Book: Regulations and Instructions for the Use of the National Forest Reserves.* (Washington, D.C.: Government Printing Office, 1906) p. 132.
[15] The Bear Paw Forest Reserve was never proclaimed due to the fact that far too much forest land within its proposed boundaries was no longer owned by the federal government.

5. Forest Atlas of the National Forests of the United States

In his Annual Report to the Secretary of Agriculture for the fiscal year 1906/07 and published on December 3, 1907, Gifford Pinchot wrote to Secretary of Agriculture, James Wilson:

> "During the year a radical change was made in the methods of recording, classifying, and making available for reference upon maps the information concerning the forests of the country, and especially the National Forests, gathered by the Service. A scheme was adopted which improved and standardized the methods employed, both in field and in office work. By the use of graphic symbols like those of the U.S. Geological Survey and the Coast and Geodetic Survey, record is made of the character of the land and of the forest, its ownership, grazing conditions, and other matters. To take charge of the maps on which appear the data thus gathered and to keep them always up to date, a special section, that of "The Forest Atlas," was created."
>
> "Folios of the more important Forests are being printed for the use of the field men. Others are duplicated by photography, and copies are furnished to supervisors. The work of preparing these maps of the National Forests was done in cooperation with the U.S. Geological Survey, which already had carefully prepared topographic maps of much of the country now included within the National Forests."[16]

The mapping plan envisioned by Pinchot was "radical" in the sense that the new section on his organization chart called "Atlas" was attempting a task no less ambitious than to compile a complete set of standard maps in portfolio for each national forest which carried all the information needed by the supervisor and ranger to fulfill their managerial duties. The plan must have appeared at the time as tremendously ambitious since many of the new national forests were located in the most isolated and unmapped areas of the west. However, the idea and scope of the project was not entirely unprecedented. An earlier, first expression of a similar atlas project can be found in John Wesley Powell's *Geologic Atlas of the United States*, originally planned as one atlas for each topographic quadrangle. Powell's *Geological Atlas*, published in 227 folios between 1894 and 1945, included a descriptive text, topographic reference map, geologic map, geologic cross-section sheet, and, if warranted, underground maps of mines and information on mineral resources. Indeed, Pinchot's *Forest Atlas* and Powell's *Geologic Atlas* measured the same at 21 inches tall and 18 inches wide, with title, agency name, and an index map giving the location of the area covered in the atlas on the front panel. The *Geologic Atlas* had maps bound in; the *Forest Atlas* was unbound, because Pinchot's plan called for the atlas to be continually updated. The idea of a *Forest Atlas* also appealed to Pinchot's and the Progressive Era's belief in what has been called the "Gospel of Efficiency," in that his vision of the *Forest Atlas* called for all spatial and thematic information needed by his bureau to carry out their duties was to be found in one publication and kept current by professional foresters in the field.[17] It was not only an efficient administrative tool, it also fit into Pinchot's decentralized organizational model: professional forest service staff at the local level objectively acting on real forest conditions, while informing a central administrative office, which supplied standards and support services.

The existence of a single atlas sheet for the San Francisco Mountains National Forest held by the American Geographical Society Library at the University of Wisconsin, Milwaukee indicates that the Forest Service and Pinchot sought input from respected scientists of the time on the content and format of

---

[16] U.S. Forest Service. *Report of the Forester for 1907.* (Washington: Government Printing Office, 1908) 29-30.

[17] Samuel P. Hayes. *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920.* (New York, Atheneum, 1975), p. 266.

the proposed *Forest Atlas*. This sheet has not been found in any other library or repository.[18] The AGS example has a note that reads, "Acquired by Gift Jul 16, 1921 from Dr. I. Bowman" that is Dr. Isaiah Bowman (1878-1950), director of the American Geographical Society from 1915 to 1935 and author of the landmark work, *Forest Physiography* (New York: Wiley, 1911). Ink handwriting on this sheet states, "Part of Forest Atlas of U.S.A. (issued for use of Forest Officers only)" and on the back of the sheet in crayon, "Forest Atlas Sample Page." Extensive typescript descriptive notes on the sheet address map standards, suggest ways to deal with non-conforming legend symbols, and the general size of sheets. This format, coverage, and symbols shown in this single sheet later became the standard for every sheet that followed in the *Forest Atlas* and indicates that Pinchot sought expert advice and comment from the scholarly community before launching his radical mapping project for the national forests. A full descriptive citation of this review sheet is provided below:[19]

> **[Forest Atlas of the National Forests of the United States: San Francisco Mountains Folio].**
> [U.S. Department of Agriculture, Forest Service]; [land] Title from U.S.G.S. twp. maps; compiled by H.S. Meekham; [traced by] G.T.T. – 1907.
> 1907. Scale, ca. 1:63,360. W112º22' – W112º10'/N35º05' – N35º20'. Public land (Township Range) grid. Color, 1 numbered sheet without portfolio, 54 x 46 cm. Relief shown by contours and spot heights (contour interval 250 feet).
> Shows national forest and county boundaries, towns and settlements, roads, trails, railroads, Forest Service facilities, rivers, lakes, and streams. General land classification shown in color and the type of alienated land within national forest boundaries shown by letter, both keyed to a separate legend sheet. Sheet is titled, *San Francisco Mtn's.* and designated as [sheet] 5. Map is centered on the Bill Williams Mountains, provides coverage of Townships 20, 21 & 22 North, and 1 & 2 East, Gila and Salt River Meridian, and includes the town of Williams, Arizona.

Even though the U.S. Geological Survey ceased to have responsibility for examining the forest reserves after 1905, its staff of cartographers and engravers continued to work with the Forest Service on the compilation and printing of the multi-sheet 1:63,360-scale *Forest Atlas*. In its 1910 *Annual Report* the Survey's Topographic Branch reported that in order to compile the *Forest Atlas of the National Forests of the United States*, "All the work of the United States Geological Survey, the General Land Office, and the Hayden Transcontinental [1867-1878], and Wheeler surveys [1869-1879], as well as work done by the Forest Service, was incorporated in these maps. The Forest Service furnished the status of all lands inside forest boundaries. Where the timber classification was considered up to date, it was shown in color on the maps."[20]

Henry Gannett provided more information about the atlas project, now that certain procedures had been put in place, in the 30th Annual Report of the U.S. Geological Survey: "The work of preparing the folios of the atlas of the national forests was continued under the direction of A[rthur]. C. Roberts. The maps were made on the scale of 1 mile to the inch and published with 6 townships to the page."[21] Many of the folios were published only in a black & white edition, without thematic timber type, density, or land

---

[18] Fred G. Plummer Chief of Geography for the Forest Service wrote to Frank Pooler, District Forester for District No. 3 (Southwest) transmitting "one advance folio of San Francisco Mtns. which is no longer needed at Washington and may be disposed of or destroyed as you think best." Fred G. Plummer to Frank C.W.Pooler, October 25, 1909, RG 95.4.1, Records of the Engineering Division, Forest Service.

[19] Thematic information on forest type and density was readily available in the U.S. Geological Survey's *Professional Paper* No. 22, "Forest Conditions in the San Francisco Mountains Forest Reserve," (Washington: Government Printing Office, 1904).

[20] U.S. Geological Survey, *Thirty-First Annual Report of the Director of the United States Geological Survey to the Secretary of the Interior for the fiscal year ending June 30, 1910,* (Washington: U.S. Government Printing Office, 1910), 279.

[21] U.S. Geological Survey, *Thirtieth Annual Report of the Director of the United States Geological Survey to the Secretary of the Interior for the fiscal year ending June 30, 1909,* (Washington: U.S. Government Printing Office, 1909), 256.

classification, either because there was no such information available at the time of compilation or the thematic information was out of date. The same was true for topographic information, which was added to the atlas sheets only when available. It was decided that thematic information could be applied on the black & white maps by the foresters in the field at a later date. In fact, each folio sent to the District headquarters for distribution included a set of colored crayons corresponding to the colors used for timber density. The Survey's role in compiling the *Forest Atlas of the National Forests of the United States* ended in 1910. Mary C. Rabbitt in her history of the U.S. Geological Survey wrote that in 1910, "A disagreement with the Forest Service about control of the work led the Survey to discontinue the preparation of the atlas of the national forests. Folios of 36 forests had been completed; four partly finished folios, on Director [of the U.S. Geological Survey George Otis] Smith's orders, were turned over to the Forest Service." [22] However, because the Forest Service lacked its own printing facility, the Geological Survey continued to prepare plates and print new editions of the *Forest Atlas* well into the 1920s.

The *Forest Atlas of the National Forests of the United States* comprises over 5,000 atlas sheets in 156 individual National Forest titles and 28 variant editions, with some 3,800 black & white and colored sheets produced between 1907 and 1910 alone. Each folio was separately sub-titled and contained map sheets covering one national forest. Folios for the Luquillo (Puerto Rico) and the 1907 Wichita (Oklahoma) National Forests have only one oversized sheet in folio. The largest folios were the Lewis & Clark National Forest in Montana at 56 sheets and the Blue Mountains National Forest in Oregon with 50 sheets. The first folios came off the presses in 1907; the last, the third edition of the Caribou National Forest atlas for the Intermountain District (4) was issued in 1929. As administrative boundaries shifted or as larger forests were divided into new, more manageable forests, atlas sheets were reshuffled into new combinations, such as the Nez Perce Folio of 1909 or the Deschutes Folio of 1910. When two or more forests combined to form another, as in the case of the Angeles National Forest, the result was that the Folio had two numbering systems. Ten atlas sheets were made for the San Gabriel National Forest and another ten for the San Bernardino National Forest, both sets were numbered 1 to 10. In 1908, when the two forests were combined into the new Angeles National Forest, the two separate folios were in the final preparations for printing. It was too late to change the numbers on the sheets, but a new folio folder was designed for the Angeles National Forest atlas resulting in its map index and its map sheets carrying two separate numbering sequences. The forest atlases were being compiled during a time of rapid reorganization of the national forests between 1907 and 1910 and atlas compilers were constantly confronted with the unsettled nature of national forest names and boundaries.

A colored legend sheet came with each atlas folio whether or not the atlas sheets themselves were issued in a colored edition. The legend indicates with various colors, five classes of timber densities, six other land cover classes, three types of burned over lands, windfalls, bug infested timber, three types of old cut-over areas, three types of timber sales areas, cultivated land and irrigated lands. Tree species are also identified. Courtesy of the General Land Office, the atlas sheets show 14 different types of land entries, such as cash and desert entries, state lands, and the limits of railroad and wagon road land grants, as well as "in lieu" lands granted to states as compensation for state school sections within national forest boundaries. Atlas sheets show four types of mining claims together with the claim's four-digit file number. File numbers can then be taken to find the text of the actual claim.[23] In regard to alienated lands

---

[22] Rabbitt, Mary C., *Minerals, Lands, and Geology for the Common Defence and General Welfare*, Volume 3, 1904-1939, (Washington: Government Printing Office, 1986), 97 and op cit. *USGS Annual Report for FY 1910*. (Washington: Government Printing Office, 1911) p. 279 that states that partially completed atlases "were turned over to the Forest Service by order of the Director [of the U.S.G.S.]."

[23] Staff members at the National Archives have reported that researchers interested in mining claims have been, by far, the heaviest users of their set of forest atlases.

within national forest boundaries, most map sheets identify landowners by name. And from various topographic surveys, contour lines were transferred onto atlas sheets whenever they were available. Finally, the legend has conventional signs for a wide array of cultural features, such as boundaries, roads and trails, telegraph/telephone lines, structures, and all manner of forestry related improvements, like skidways, flumes, log driving routes, and sawmills. The colors and symbols found on the legend sheet applied to all forest atlases. The legend sheet later formed the basis for the standardized symbols used by the Forest Service for its administrative maps.

A separate atlas series and legend sheet for grazing purposes was begun according to the same plan at about the same time as responsibility for the compilation of the *Forest Atlas* was transferred from the U.S. Geological Survey to the Forest Service. Few grazing atlases were compiled; most being made between 1910 and 1914 for range lands in Idaho, Montana, Wyoming, and northern Arizona and were initiated by the District Office to meet the District's needs. Most are quite incomplete, but are listed here whenever encountered.

At the height of *Forest Atlas* production, in December, 1908, the Assistant Forester, C.S. Chapman, sent a letter to all District (Regional) Foresters informing them that the Forest Service's Office of Geography was preparing a history of the national forests to be included with the forest atlases then being issued. Chapman wrote to the Foresters,

> "It is evident that much of the information required for this work must be secured through such personal knowledge of local conditions as only the officers in direct charge of the Forests are in a position to obtain. I will, therefore, be very glad if you will take this matter up with each of your Supervisors and secure from them the necessary reports upon their Forests, and forward the reports this office before the first of February [1909], if possible. In order to assist you, I have sent you, under separate cover a supply of a form of Report, entitled, *Report for Forest Atlas* indicating in a general way, the substance of the information desired. I will also send as soon as possible, copies of a bulletin containing a History of the Teton National Forest which will serve as a sample sketch."[24]

In response, William B. Greeley, then the District Forester for District No. 1, sent a letter to his forest Supervisors later that month asking that historical information on native inhabitants, early explorers, settlement, major fires, economy, etc. be gathered by the rangers in the field. Along with this request, Greeley sent what he called a circular entitled, *Report for Forest Atlas.*[25] Unfortunately, no *Forest Atlas* could be located anywhere that included a national forest history, nor could a history be found that was published separately and issued for the *Forest Atlas*. Perhaps the press of ordinary business dictated that this call for a history of each national forest to be included in every *Forest Atlas* became a low priority for forest Supervisors. Such historic information on the early history of the national forests would have proved invaluable not only for the Forest Service itself but for many others throughout the 20th century through to our times. It is possible, but there is no way of knowing, if the historic information called for by Assistant Forester Chapman in 1908 was actually written and saved, and later found its way into the text on forest visitor maps.

This singular achievement in the history of federal mapping has gone almost completely unrecognized because the atlases were never allowed to be released to anyone other than Forest Service employees.

---

[24] C.S. Chapman to William B. Greeley, December 4, 1908, RG 95.4.1, Records of the Engineering Division, Forest Service.
[25] William B. Greeley to District 1 forest supervisors, December 22, 1908, RG 95.4.1, Records of the Engineering Division, Forest Service.

Pinchot in his monthly staff publication "Field Program for January, 1908" (issued December 31, 1907) that:

> "Forest Officers are cautioned that the *Forest Atlas Folios*, which are being issued as rapidly as possible, are confidential records for the use of the Service only, and under no circumstances are to become the property of or be loaned to people outside of the Forest Service."

The 1912 booklet, *Instructions for Making Forest Surveys and Maps*, issued by the Office of Geography also prohibited Forest Service staff from sharing pages of the *Forest Atlas Folios* with the public:

> "Whenever Forest Atlas folios have been duplicated by photolithography or otherwise for a National Forest, the officers have been supplied with copies, but under no circumstances are copies of any atlas folio be sold or given away. They are strictly for the use of forest officers in the administration of the National Forests. Copies for distribution are not published."[26]

And a note inside the Forest Atlas of the Wichita National Forest of 1907 held by the American Geographical Society acquired from the Forest Service's Washington, D.C. January 31, 1921, states that, "Forest Service cannot supply us with copies of other Nat. Forests in this form – issued for use of Forest Officers only." So even into the 1920s, Forest Atlases were still being withheld from public view.

The Forester did not explain the reasoning behind the order to keep the atlases from the public, but one must assume that the atlases carried sensitive and/or proprietary information (mining claims, names of land owners, locations of the best stands of timber, etc.) that the Forest Service did not want to make generally available. The result of the policy has been, however, that the atlases have never been fully examined and brought to the attention of modern day scholars and researchers. The most complete collections of these atlases are held by the National Archives in College Park, Maryland, the National Agricultural Library in Beltsville, Maryland, and Yale University's Graves Forestry and Environmental Sciences Library. Large, but not fully complete, sets of atlases can be found at the University of Wisconsin Milwaukee Libraries, American Geographical Society Library and at the Geography and Map Division of the Library of Congress in Washington, D.C. The set of atlases held by the Geography and Map Division (G & M) has some large gaps in its collection, noticeably folios for the forests of the Pacific Northwest. This might be due to the fact that the G & M collection was formerly a working set transferred during World War II from the offices of the Forest Service in Washington, D.C. The American Geographical Society's collection consists of about half of the atlases printed and were transferred to the Society in the spring of 1935 by individual Foresters in Regions 1, 3, 4, 5, and 6 about the time when the Forest Atlases ceased to be used in the administration of the national forests, when new forest type maps were being compiled and printed, and when the Forest Service began to use aerial photography as its primary tool for resource inventory and management. A few atlases have made their way into academic and historical society libraries as gifts or bequests from former employees of the Forest Service and their families, such as the Umpqua Folio pictured below held by the University of Oregon Library. Other collections may be found in some regional offices of the Forest Service such as Region One in Missoula and in a few state historical societies.

The U.S. Geological Survey printed the folios of the *Forest Atlas* in limited quantities. In a letter from Fred G. Plummer to Arthur C. Roberts of the Geological Survey, 1907, Plummer asks that "Unless otherwise specified, please print 200 folios of each of the National Forests which you have under preparation, and in all cases where classification is to be shown, one-half of the edition will be colored

[26] U.S. Forest Service, Office of Geography, *Instructions for Making Forest Surveys and Maps*, revised December 1911, (Washington: Government Printing Office, 1912), p. 67.

and the other half black base maps." Where colored land classification information was not available, the Geological Survey was instructed to print 200 copies of each the *Forest Atlas*.[27] Information on the distribution of the 200 copies has not been located, but from known distribution of Forest Service maps, one can gather that quantities of atlases were shipped to Forest Service offices in Washington, D.C. where a few copies were held, while most were then sent on to Foresters in the District Offices and to Forest Supervisors who were charged with keeping the atlas folio up to date. Here is the typical distribution letter from Fred G. Plummer addressed to Forest Supervisors:

Mr. V. Gifford Lantry April 20, 1909
Absaroka National Forest
Livingston, Montana

Dear Sir:

There has been forwarded to you from Washington a lithograph edition of the Absaroka National Forest Folio of the Forest Atlas, together with such extra sheets as were received from the engraver.

The sheets comprising this folio were compiled from the best data at hand and will serve as a working basis for a more accurate edition which may be issued at a later date. They are not for sale nor for distribution to the public, but are confidential records to be used by you and by your rangers in any way in which they will be of service.

At least once in three months you should forward to the District Forester sheets showing any corrections or additions according to the Atlas legend. Such data will be posted upon the District Atlas and forwarded to Washington, and will serve as a basis for a future edition, and in the meantime as a record of the available information.

Very truly yours,
[Signature] Fred G. Plummer
Chief of Geography [28]

Every Region had a different experience with the *Forest Atlas,* because, before it could be fully completed, the program's major advocate, Gifford Pinchot, left the Forest Service. His overall plan for the *Forest Atlas* -- professional foresters in the field being supplied with best available maps of their forest from Forest Service Headquarters; foresters noting changes and corrections to sheets from first-hand observation; revised maps being returned to Washington, D.C. for corrections and updating; new atlas sheets being printed with the new information and returned to foresters in the field -- still existed but it appeared not to be fully enforced largely because of Pinchot's other vision of a decentralized administrative arrangement for the Forest Service. From the publication record, the Rocky Mountain, Southwestern, Intermountain, and North Pacific Districts simply did not continue with the plan at all. Others such as the Northern and California Districts (now Pacific Southwest Region) tried to keep their *Forest Atlas* series relevant and up-to-date, but did so to meet their own specific requirements apart from Pinchot's uniform national plan.

[27] Fred G. Plummer to Arthur C. Roberts (USGS) August 3, 1907, RG 95.4.1, Records of the Engineering Division, Forest Service.
[28] Fred G. Plummer to V. Gifford Lantry, April 20, 1909, RG 95.4.1, Records of the Engineering Division, Forest Service.

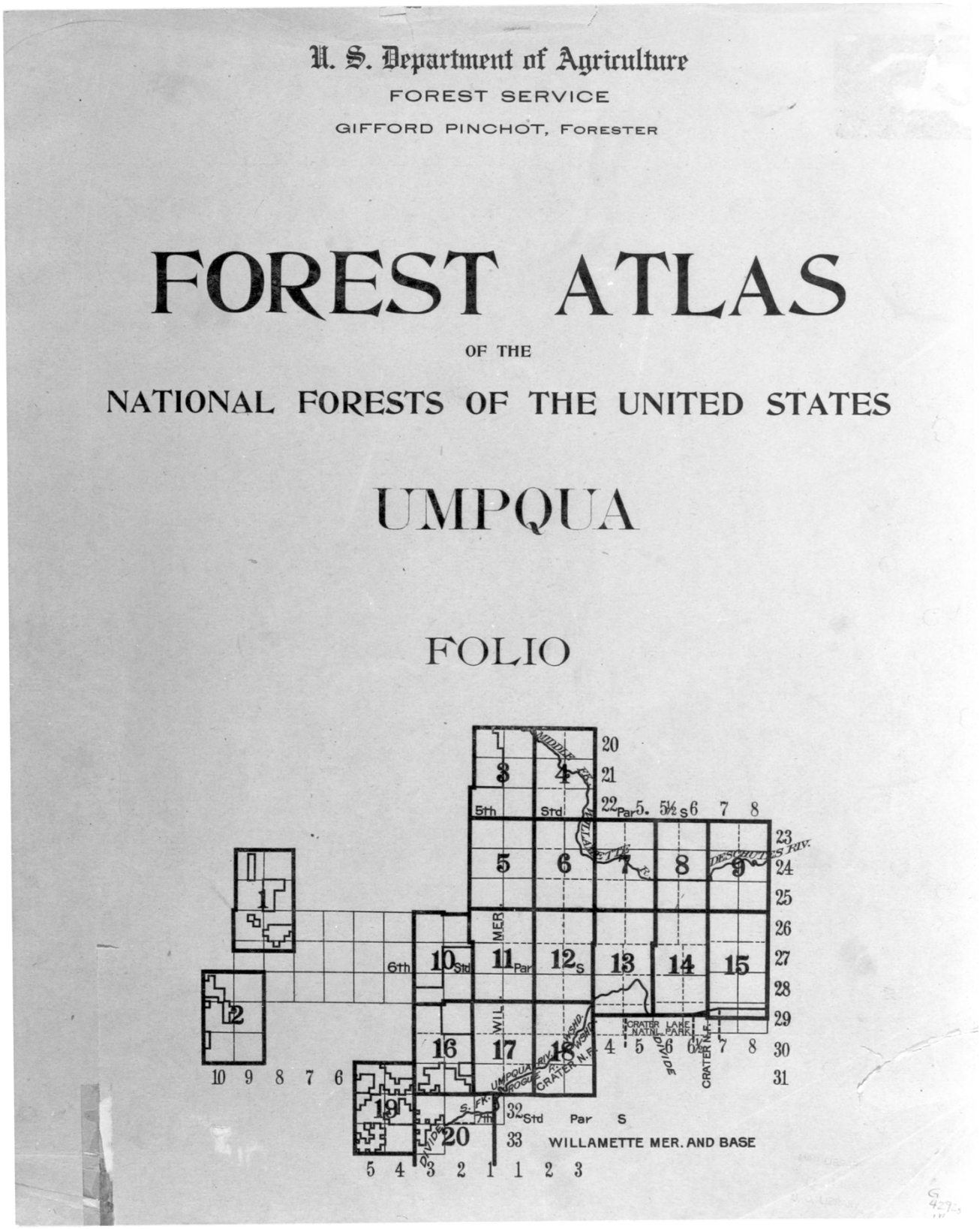

Illustration 3: Standard front cover of the *Forest Atlas of the National Forests of the United States* Umpqua Folio [Oregon] of 1911 showing sheet arrangement.

6. The decentralized administrative organization and its effect on early Forest Service mapping.

While singularly focused on the highly centralized mapping endeavor of compiling, printing, and distributing the folios of the *Forest Atlas*, Gifford Pinchot and his able Associate Forester, Overton W. Price, were moving the Forest Service's overall administrative organization in a different direction, one that would become a hallmark of the agency. This was their concept of decentralization, which has been described by historian Robert W. Cermak:

> "This concept recognized three important facts: the forest reserves differed widely from one another in resources, problems and opportunities; administration of the forest reserves had to be responsive to local needs for both practical and political reasons, and people work best when given responsibility for a job and the authority needed to get the job done."[29]

Cermak continues that decentralization embraced the practical goals of hiring the best people available, both experienced local woodsmen who had good standing in their communities and professional foresters, all governed by federal Civil Service rules, to manage the forests. Finally, it was important to provide a few but vital controls over field operations by issuing standards and policies in an overall supportive atmosphere from Washington. The principal of a decentralized administration was fully embraced by Pinchot's successor, Henry S. Graves when he was appointed Forester in 1910 and has been a notable feature of the Forest Service ever since. However, when Graves assumed his post as Forester, most mapping was still done in Washington: "While a certain amount of drafting and map work is conducted in the district offices, and a small amount necessarily on the Forests, the greater part is concentrated in Washington for reasons of economy."[30]

The few centralized controls over local operations were expressed in such early publications as the *Use Book* and *National Forest Manual*. Controls clearly meant standardization and another important manual that provided standards was the *Instructions for making Forest Surveys and Maps* first published in 1907 with a second edition released in 1910. The first edition of the *Instructions* booklet served as a manual of surveying and map-making in the field. The edition of 1910 added a chapter on preparing sheets for the *Forest Atlas.* An enlarged third edition appeared in 1912 with a supplement, *Signs, Symbols, and Colors,* prepared by the Office of Geography. The third edition of the *Instructions* had grown to 85 pages over the second edition's 51 not counting its supplement and represented a significant advance over previous editions of the map manual. This 1912 edition of the *Instructions* was an expression of the decentralization in Forest Service for cartography. "These simple Instructions are issued to members of the Forest Service in order that forest surveys and maps may be as nearly uniform as practicable."[31]

The 1912 *Instructions for Making Forest Surveys and Maps* allowed a certain measure of regional variation when it stated that: "It should be borne in mind that the National Forests are established in widely different regions; as far north as Alaska and as far south as Florida and Porto Rico. On no two forests will the data suggested on the legend page be of equal importance, and it may be necessary or convenient to adopt additional symbols or colors to show unusual conditions. This is quite

---

[29] Robert W. Cermak, *Fire in the Forest: A history of forest fire control on the National Forests in California, 1898-1956.* ([Vallejo, Calif.]: USDA Forest Service, California; Washington: Government Printing Office, 2005), p. 40.
[30] Henry S. Graves, *Report of the Forester for 1911,* (Washington: Government Printing Office, 1912), p. 7
[31] U.S. Forest Service, Office of Geography, *Instructions for Making Forest Surveys and Maps, 1912,* (Washington: Government Printing Office, 1912, p. 5.

permissible…"[32] Forest Service mapping from the period 1910 to 1922 varied greatly from district to district. District 1 produced a wide array of topographic maps and atlases but only one map specifically for the forest visitor. In contrast, by 1918, districts 5 and 6 had produced many folded forest visitor maps for the national forests in California, Oregon, and Washington, but only a few revisions to their sets of *Forest Atlases*. Other districts issued a mix of administrative maps and forest visitor maps based on the district's needs. All districts produced administrative maps of individual national forests and all, to a varying degree, relied on the Washington Office to compile their district's maps. In short, each district had the autonomy to respond to their local needs using their local resources in order to provide maps in support of Forest Service staff in the field and to a lesser degree, for forest visitors. Assistance as well as control was available from the Washington Office.

By 1910 with most forest atlases now complete and with responsibilities for their maintenance placed at the district level, it became necessary for each district to recruit and hire cartographers and draftsmen capable of making and revising maps as well as making township and control surveys in the field. In Missoula, like other district foresters, District Forester William B Greeley began forming an Office of Geography within the District's Branch of Operation by hiring a recent graduate of the University of Montana, Frank Edward Bonner, to be his Chief of Geography. Soon, another cartographer, Charles F. Farmer joined the staff. Other cartographers and draftsmen followed. Another University of Montana graduate, Frank J. Cool, along with James Blaine Yule and Kenneth Dupee Swan came on board shortly after 1911. Together, the team of Bonner, Farmer, Cool, and Yule produced much of the cartographic work between 1910 and 1920 for the Northern District. Their names appear on many *Forest Atlas* sheets and individual forest maps for these years and beyond and signaled a transition to a time of less dependence on the Washington Office for map compilation. Other Districts, notably the 3rd and 4th Districts (later the Southwestern and Intermountain Districts respectively) still had most of their map work done by the Washington Office. Districts 5 and 6 (California and North Pacific Districts) had moved even faster than District 1 on hiring cartographers and draftsmen, compiling maps and atlas sheets in house as early as 1911. By 1920, all district offices had a productive cartographic staff in place, now working within a district Engineering Office, which continued to rely on Washington for map reproduction and distribution services. Washington Office cartographers, who up to the early 1920s had been filling in for cartographers and draftsmen yet to be hired in the Districts, became more involved with making maps for the new national forests being proclaimed in the east. With consistent policies, procedures and controls and with competent civil service cartographers on staff, as well as the ability of supervisors to respond to local needs, decentralization had been fully realized in Forest Service map making.

7. Defining a Cartographic Program: Forest Service Mapping, 1910-1922

With the 3rd edition of the *Instructions* in 1912, single sheet maps as well as proclamation diagrams produced by the Forest Service from 1912 onwards began to take on a more uniform and distinctive "Forest Service" look. The third edition now included an expanded page of "Conventional signs" together with examples of bar scales, map corners, neat lines, and a standardized typeface. For the *Forest Atlas,* a signs, symbols, and color legend sheet had been issued inside every folio, but not all *Forest Atlas* sheets were compiled using standard line weights for borders and neat lines, uniform bar scales, or a standard typeface. Compared to the maps made by the Forest Service after 1912 using the new standards, the older and hastily constructed maps in the *Forest Atlas* exhibited a somewhat unfinished character.

[32] U.S. Forest Service, Office of Geography, *Instructions for Making Forest Surveys and Maps, 1912,* (Washington: Government Printing Office, 1912, p. 71.

The overall general appearance of Forest Service maps resulted from the adaptation of map features, functions, and symbols derived from mapping programs of other federal agencies. Between 1891 and 1911, three federal agencies had been responsible for mapping the national forests and each agency influenced the way in which forest mapping would evolve. The General Land Office mapping emphasized its Public Land Survey System of township range and section lines. The GLO had also adopted standardized engineering scales of 1:31,680 or ½ mile to the inch and 1:63,360 or 1 mile to the inch, for its maps and favored hachuring over contour lines to show relief. By 1910 the Forest Service had officially embraced the 1:63,360 scale as its own standard scale, and if smaller scale maps were called for, they were constructed in even multiples of that scale: 2 inches (1:126,720), 4 inches (1:253,440) or 8 inches (1:506,880) to the mile. Because ownership of the land was so essential to both the GLO and the Forest Service, every administrative map made and the vast majority of forest visitor maps for public land states would carry the Public Land Survey System grid lines. Forest Service maps generally used hachuring to depict relief. Topographic maps compiled by the Forest Service were the exception in the early years. When land exchanges grew in importance, land ownership information was added in the form of maps showing alienated lands. The PLSS grid outranked the geographic grid in importance in these early years of Forest Service cartography for even if the General Land Office had not yet surveyed areas of a given forest, the PLSS was projected into these area using dashed lines.

From the maps of the U.S. Geological Survey, Forest Service cartographers borrowed many of the Survey's signs and symbols. Topographic, geographic, and elevation data from Geological Survey topographic maps were highly valued and used by Forest Service cartographers in administrative mapping. Topography expressed by contour lines enhanced a map's usefulness, especially in fighting fire, planning timber sales, and building roads and whenever topography was available, contours were included on the sheets of the *Forest Atlas*. Forest Service cartographers also used the navigation charts of the U.S. Coast and Geodetic Survey as base maps for their early work on the Tongass and Chugach National Forests in Alaska and borrowed symbols from this chart-making agency as well. A few mapping symbols and even soundings crept into and remained on maps of the Alaskan forests from the Coast & Geodetic Survey for many years. To a certain but perhaps unknown extent, the maps produced by the Four Great Surveys of the West (1867-1879) influenced the final appearance of Forest Service mapping in that cartographers working on the *Forest Atlas* used these older maps to compile the atlas sheets in the absence of newer data. All of these influences can be found in varying degrees on the sheets of the *Forest Atlas* and later on the single sheet maps produced by the Forest Service.

As the agency began the first years of the new decade, Forest Service cartography was firmly based on the sheets of the *Forest Atlas,* which had been compiled using every obtainable map then available to staff cartographers. The folios of the *forest Atlas* were described in the 1912 *Instructions* manual with great respect:

> "The folios are the "mother maps" which furnish the bases from which further map making will proceed in the Forest Service. They correspond to the mother maps of other countries in this respect – that they are compiled from official data upon a standard scale, 1 inch to 1 mile, and upon a uniform legend. They are not always sufficiently accurate for forest work, and the sheets must, therefore, be corrected whenever new data have been obtained in the field."[33]

Early Forest Service single sheet maps covering an entire national forest relied upon data found in the folios of the *Forest Atlas* – the mother maps. Only a few, however, indicate their source material. The

[33] U.S. Forest Service, Office of Geography, *Instructions for Making Forest Surveys and Maps, 1912,* (Washington: Government Printing Office, 1912), p. 67-68.

1912 administrative maps for the Sequoia, Malheur, and Siuslaw National Forests all do state their origins in the sheets of the *Forest Atlas*. In the case of the 1:126,720-scale map of the Siuslaw National Forest of 1912, its authority statement reads: "Compiled by assembling atlas pages corrected by the Supervisor, February, 1912."[34] This map includes information found on the sheets of the *Forest Atlas* for the Siuslaw National Forest from which it was derived, such as land and mining claims that would not appear on later administrative maps.

To illustrate this dependence on sheets of the *Forest Atlas,* the 1912 *Instructions* booklet prescribed the procedure to be used by the districts in regard to mapping:

> "General maps, showing an entire Forest or region are compiled at Washington from data on the corrected Atlas sheets, and are issued for the use of forest officers. The usual process is photolithography. Every request for the issuance of a map should be submitted to the Forester with a recommendation regarding the data to be shown or omitted, scale, kind of paper, and number of copies required. Any project for the issuance of a "three-color map" with blue drainage, brown contours, and black culture should be taken up by correspondence with the Forester before the final tracings are prepared in order that the manuscript may be in good shape for the engraver."[35]

Each Forest Service District could determine its mapping priorities, but Washington enforced map standards and arranged for engraving and printing services. Of the over 800 administrative maps produced by the Forest Service during the 1910-1924 period, approximately 54% were compiled by the Washington office with the remainder compiled by cartographers in the Districts. And of the 54% of maps compiled in Washington on behalf of the Districts, some 85% of these were made in the 1910-1916 period. After 1916, District cartographers were more often cited on Forest Service maps as the entity that compiled the maps while the Washington office continued to arrange for drafting and printing work. Because of the district's early dependence upon the Washington Office for the compilation, editing, and printing maps needed in the field, map standardization was readily and rapidly adopted. The maps generated from the atlas folios quickly began to lose their unfinished appearance and took on a much more polished look with each passing year as symbols and typefaces, corners, and neat lines were applied to every map being issued, including proclamation diagrams.

The Forest Service did not have its own printing plant and relied during this period almost exclusively on the engraving and printing services of the U.S. Geological Survey for its map production and, to a lesser extent, on the services of the Government Printing Office, both in Washington, D.C. In the Geological Survey's *Annual Reports* issued from 1910 to 1920, the agency described the number of maps it produced on behalf of other federal agencies including the Forest Service under the activities of its Division of Engraving and Printing. After 1920, the Survey's *Annual Reports* were reduced in size by about half and the in-depth reporting on printing done for other government agencies became merely a listing of those federal bureaus for which maps had been printed. The following table summarizes the printing activity performed by the Geological Survey on behalf of the Forest Service. The "Miscellaneous" category on the table below included maps printed for the reports of the National Forest Reservation Commission, as well as sheets for the *Forest Atlas*, and other atlases, such as the Forest Service's landmark 1913 atlas *Geographic Distribution of North American Trees* and other special maps. The administrative maps listed are maps covering one entire national forest at the scales of 1:126,720 and 1:253,440. Quite often a "two-inch" and "four-inch" administrative map were issued simultaneously.

---

[34] U.S. Forest Service, *Siuslaw National Forest, Oregon*, [map] 1:126,720-scale , (Washington: U.S. Forest Service; printed by the U.S. Geological Survey) 1912.
[35] Op sit, *Instructions,* p. 71.

Making a map at the same scale as the sheets of the *Forest Atlas,* 1 mile to 1 inch, for the most part, proved to be impractical due to the sheer size of the resulting sheet. However, this scale was used for smaller forests in the eastern United States and for topographic maps of ranger districts in the West. The table reveals an outpouring of administrative maps coinciding with the increased activity in the national forests during World War I.

Fiscal Year	Administrative Maps	Forest Visitor Maps	Proclamation Diagrams	Miscellaneous (Inc. Atlas sheets)	FY Total
1910	46	0	27	3	76
1911	63	0	39	4	106
1912	13	0	0	2	15
1913	59	0	33	43	135
1914	17	7	12	26	62
1915	17	11	5	10	43
1916	30	24	15	12	81
1917	29	15	9	3	56
1918	61	4	16	6	87
1919	76	0	13	12	101
1920	59	7	14	26	106
Total Type	470	68	183	147	**868**

Table 1: Maps printed for the U.S. Forest Service by the U.S. Geological Survey July 1, 1909 to June 30, 1920[36]
Chart does not include approximately 20 forest visitor maps printed by the Government Printing Office 1910-1920

Quantities of administrative maps printed were quite small compared to forest visitor maps. Letters from District Foresters formally requesting maps usually included the number requested based on anticipated need, such as the request for 500 copies of the 1914 Pecos National Forest "fire map" and 2000 copies of the 1915 Gila National Forest "fire map" the following year. Turnaround time was rather fast. For instance, the District 2 Forester's letter requesting 150 copies of an administrative map of the Arapaho National Forest dated November 9, 1911, was received in Washington on November 15th. The U.S. Geological Survey supplied the maps on February 21, 1912 and all were shipped to Denver on the 24th of February. Quantities requested increased over time due to increased demand.[37]

It could be argued that the Forest Service began issuing maps for the general public as a fire protection measure after the disastrous fire season of 1910. The first separately published forest visitor maps, as opposed to Forest Service book-type publications with foldout maps bound into the text, appeared in 1913 (Illustration 4 & 5). In the U.S. Geological Survey's annual report for fiscal year 1914 (July 1, 1913 to June 30, 1914), the Survey reported that it had produced "7 fire folder and tourist maps" and continued to refer to forest visitor maps in this way for two more years. For fiscal year 1917, the description changed to "recreation maps and fire folders" and, in the years following, simply as "recreation maps" despite the fact that the map format did not change. Through these maps and their texts, the Forest Service hoped to reduce the twin threats associated with having the public roam free in the national forests: the threat of fire and the threat of pollution of municipal water supplies by the inappropriate disposal of human waste. In his agency's annual report for 1923, Forester Greeley restated the usefulness of the recreation map as a vehicle to communicate fire control information to the public: "A number of forest maps were also used for recreation folders, which, with printed information and fire

[36] U.S. Geological Survey, *31st – 41st Annual Report of the Director*, (Washington: Government Printing Office, 1910-1920), various pages.

[37] Quantities and types of maps printed and distributed along with a record of correspondence can be found written by hand on many of the maps held by the National Archives and Records Administration for the period 1910 to about 1935.

precautions on the reverse side, are issued to the public."[38] Text publications in the form of bulletins and circulars as well as tourist maps helped to educate the public on fire and sanitation issues.

District 5 led the way in the production and distribution of forest visitor maps, no doubt due to the fact that fire control was given top priority by Coert DuBois, the District Forester from 1911 to 1919.[39] Previous to being named District Forester, DuBois, in his 1911 essay, *National Forest Fire-Protection Plans,* suggested that Forest Service rangers establish a camper's registration system located at ranger stations or along the main traveled roads leading to camping grounds as a fire-preventative measure.

> "It has been found in California that the names and plans of campers are easily secured if only the ranger has something to give in exchange. Camper's maps have therefore been prepared showing roads, trails, meadows where feed may be obtained and other data of interest to the camper. Rules for care with fires and a short summary of the game and fire laws are printed on the margin of the map. The fact that his name, address, and destination are on record with the ranger is no slight restraint to prevent a camper from being careless with his fires.[40]

When DuBois became District 5 Forester later that year, he put into effect his suggestions by instituting camper registration at forest camps and launching a series of detailed maps of California forests for the recreational user. The 1915 booklet, *Handbook for Campers in the National Forests in California,* large portions of which serve as a fire-prevention manual, advertised that "Maps are published of many of the National Forests, showing in some detail the roads, trails, and streams, and giving information regarding distances, camping grounds, etc. These maps may be obtained free on application at any Forest service office."[41] Indeed, by 1918 every national forest in District 5 in California, except the coastal Monterey National Forest, had a large-scale folded forest visitor map published and available to the public free of charge. Other districts could not match District 5 in this regard, although District 6 came close during this period. All forest visitor maps from 1914 to 1918 had a similar unadorned appearance, issued without illustrations and primarily at the scale of 1:253,440 (see Illustrations 4 & 5, 6 and 7). Maps were also issued at the scale of 1:126,720 and frequently required two sheets to cover one forest. The maps had a descriptive text, fire prevention instructions, tables of distances, vicinity maps, and often included hunting laws, hunting seasons and information on state agencies issuing hunting licenses. Unfolded, maps of District 5 national forests used red and green overlays to show thematic information useful to those groups mentioned in the map's cover title, namely, hunters, campers, tourists and mountain travelers. The Inyo National Forest map of 1917 was typical (see Figure 4). Shown in red, were symbols for roads, post offices, areas of geographic interest, "particularly attractive" campsites, and large letters "S," "G," and "R" standing for places where one could obtain *S*upplies, *G*asoline, and *R*anches where butter, eggs, milk, etc. can be purchased. Lastly, over Mono Lake, the map reader finds written in red, "Ducks." In green, large letters "P," "G," and "M" standing for locations where one can obtain *P*ack and saddle stock, a trail *G*uide, and a *M*eal. Other symbols show four types of stock meadows, good fishing streams, and stocked streams or lakes. And on some of California forest maps, the Forest Service was not afraid to simply write "unexplored" over remote areas. Other than those maps of California forests, the forest visitor maps issued by districts 2, 3, 4 and 6 were most often closely associated with an urban area, such as the maps of the Pike National Forest near Denver, the Pecos National Forest near Santa Fe,

---

[38] William B. Greeley, *Report of the Forester,* (Washington: Government Printing Office, 1923), p. 45.
[39] See chapter V in Robert W. Cermak, *Fire in the Forest: A History of Forest Fire Control on the National Forests in California, 1898-1956*, (Vallejo, Calif.: USDA Forest Service, Pacific Southwest Region, 2005), p.57-74.
[40] Coert DuBois, *National Forest Fire-Protection Plans,* (Washington; Government Printing Office, 1911), p. 2-3
[41] See U.S. Forest Service, *Handbook for Campers in the National Forests in California,* (Washington: Government Printing Office, 1915. "Misc. O-5." p. 3-4.

and the Cache, Uinta, and Wasatch National Forest close to the bench cities of Utah. These maps set a high standard for information delivery for the time and now serve as a remarkable window to the pursuit of outdoor recreation in the national forests during the early part of the 20th century.

In 1918, the Washington office compiled and the U.S. Geological Survey printed a uniform map of each of the six Forest Service districts of the West in two editions; one with and one without a highway overlay. District 5 composed text for the verso of the map and had it printed and folded for the public, the first such map to include photographic illustrations. But other districts did not follow California's example. After 1918 and until about 1924 the uniformity of forest visitor maps ended as national forest districts produced a wide variety of non-standard maps and publications for their users with more printing done by the Government Printing Office. District 5 created a series of small-scale road maps for the national forests of California similar in size and format to the "in and out" maps that the Southern California Automobile Club published at the time for western cities (see Illustration 7B). This series used the common title of *"Automobile Route Map of the…. National Forest* or *Forests"* as the case may be, on the map's title panel. All were printed on a sheet 20 x 27 cm., tri-folded to 20 x 9 cm. by the Government Printing Office in 1919. The maps represented a significant departure from the large-scale folded forest visitor maps published between 1914 and 1918. Districts 3, 4, and 7 each issued recreation maps covering their districts as a whole, as in the 1922 map, *National Forests, District 3, Showing Main Highways*, or a large portion of their territory, such as District 4's *Recreation map of the National Forests of South Central Idaho* also issued in 1922. In 1919, District 2 issued nine forest visitor booklets for its national forests complete with text, photographs, and a sketch map folded and inserted at the back of the booklet, all printed by the Government Printing Office (see Illustration 8). These booklet style publications were later expanded and improved during the 1930s and 1940s. District 6 also produced a number of booklets with maps for the forest visitor folded inside the back cover. These were included in the Department of Agriculture's, *Departmental Circular* series as "Contribution from the Forest Service." Finally, the Northern District produced a series of four, 1:500,000-scale "Quadrangle" maps for the public covering the heart of the northern Rocky Mountains between 1922 and 1924.

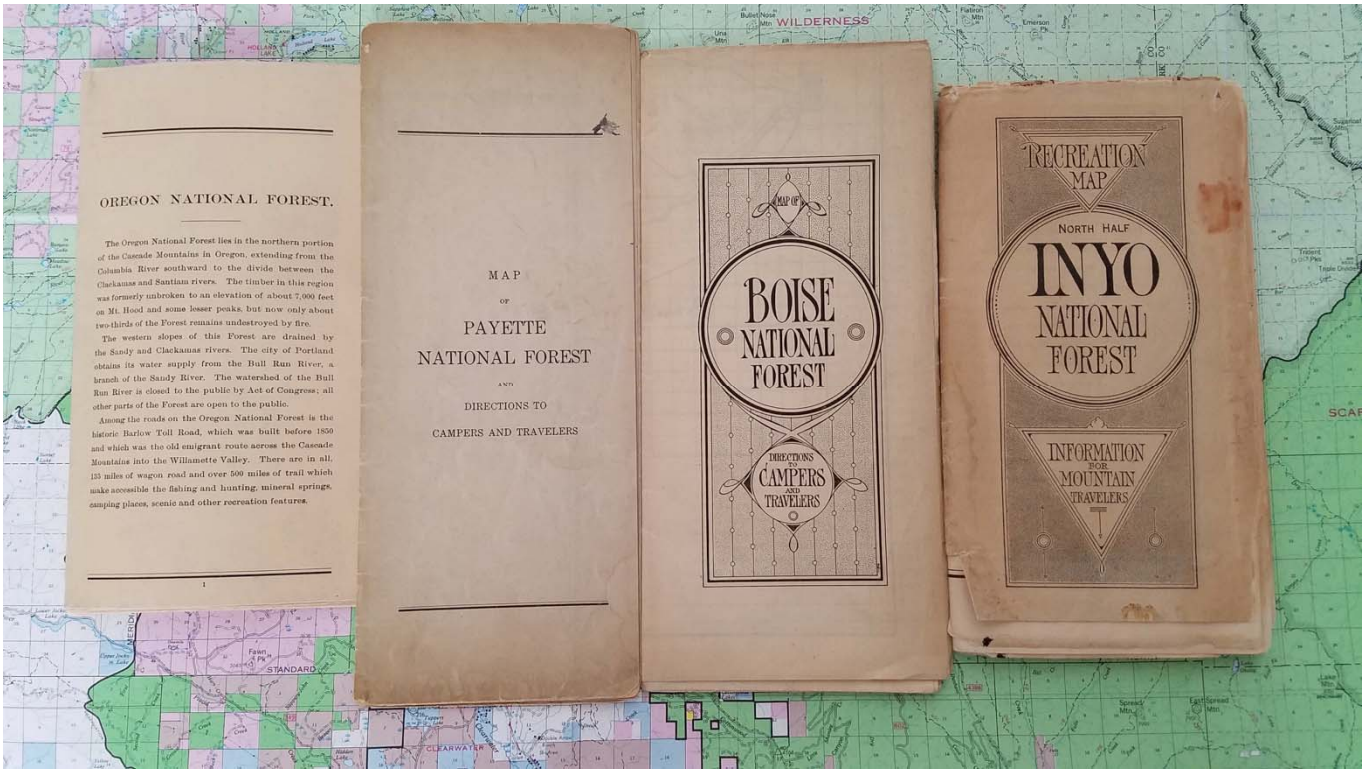
OREGON NATIONAL FOREST.
The Oregon National Forest lies in the northern portion of the Cascade Mountains in Oregon, extending from the Columbia River southward to the divide between the Clackamas and Santiam rivers. The timber in this region was formerly unbroken to an elevation of about 7,000 feet on Mt. Hood and some lesser peaks, but now only about two-thirds of the Forest remains undestroyed by fire.
The western slopes of this Forest are drained by the Sandy and Clackamas rivers. The city of Portland obtains its water supply from the Bull Run River, a branch of the Sandy River. The watershed of the Bull Run River is closed to the public by Act of Congress; all other parts of the Forest are open to the public.
Among the roads on the Oregon National Forest is the historic Barlow Toll Road, which was built before 1850 and which was the old emigrant route across the Cascade Mountains into the Willamette Valley. There are in all, 135 miles of wagon road and over 500 miles of trail which make accessible the fishing and hunting, mineral springs, camping places, scenic and other recreation features.
MAP
OF
PAYETTE
NATIONAL FOREST
AND
DIRECTIONS TO
CAMPERS AND TRAVELERS
MAP OF
BOISE
NATIONAL
FOREST
DIRECTIONS TO
CAMPERS
AND
TRAVELERS
RECREATION
MAP
NORTH HALF
INYO
NATIONAL
FOREST
INFORMATION
FOR
MOUNTAIN
TRAVELERS

Illustration 4: Examples of Forest Visitor maps issued in the decade of 1910-1919. The first is the 1913 Oregon National Forest Map (later the Mount Hood National Forest) made at the District Office in Portland, Oregon; the Payette National Forest dated 1914, the Boise National Forest of 1917 and the Northern Half of the Inyo National Forest of 1917. The Idaho and California forest maps were compiled in the Washington, D.C. office. All had text on their versos describing fire safety, game laws, and other information for forest users. The U.S. Geological Survey printed all four. None were illustrated and their cover panels were simple and unadorned.

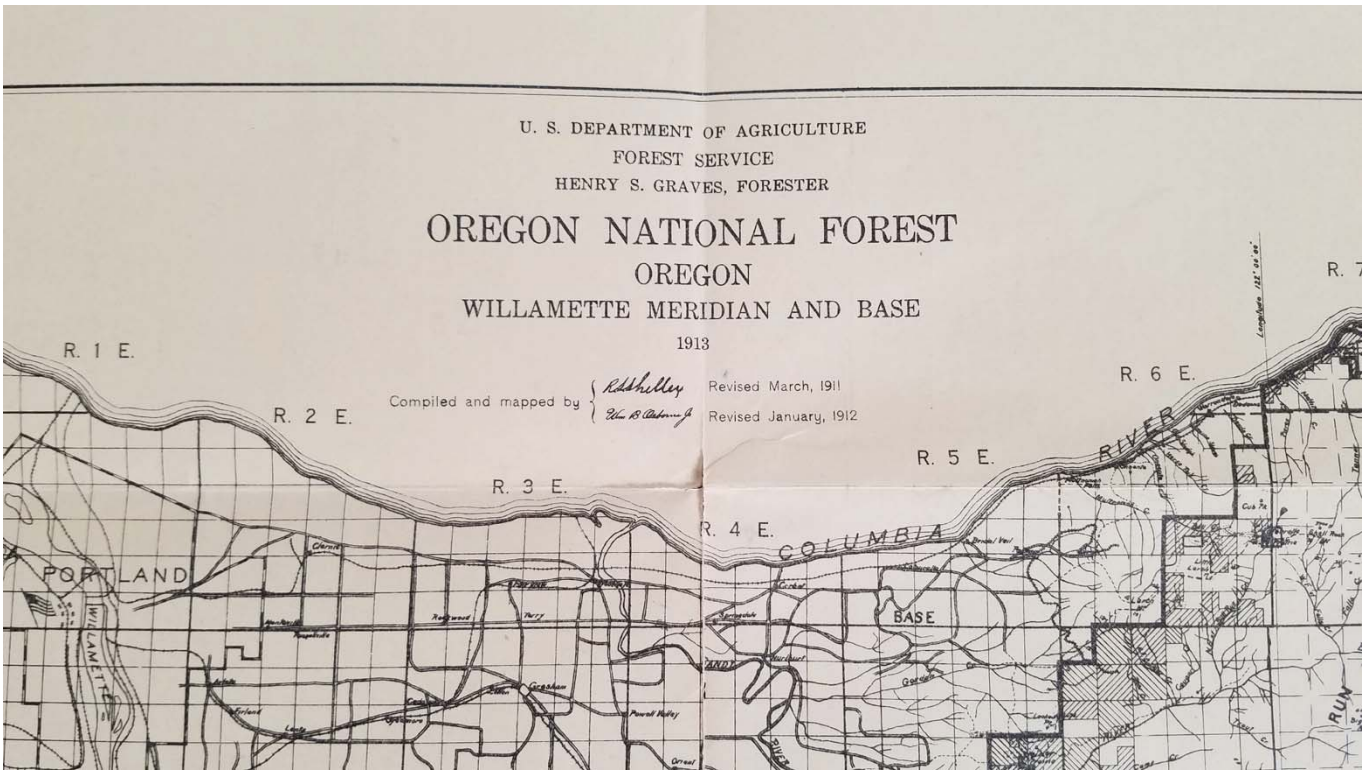

Illustration 5: Title and compilation information from the upper left portion of the unfolded 1913, 1:253,440-scale map of the Oregon National Forest (folded map shown in Illustration 4 above) showing signatures of the cartographers and the area between Portland, and Bonneville, Oregon. The U.S. Geological Survey printed 5,050 copies of the map. Hand annotations on the National Archives' copy reveal that the Forest Service referred to these early folded maps as "Fire maps." Indeed, the text on the map's verso in large part is dedicated a discussion of forest fire prevention, laws, and penalties. This map was compiled and mapped by R.S. Shelley, the Deputy Forest Supervisor on the Oregon National Forest and revised March, 1911 and January 1912 by William B. Osborne, Jr. Both their signatures appear on the map**.** Finally, the map was corrected in the District Office, Portland in April of 1913.

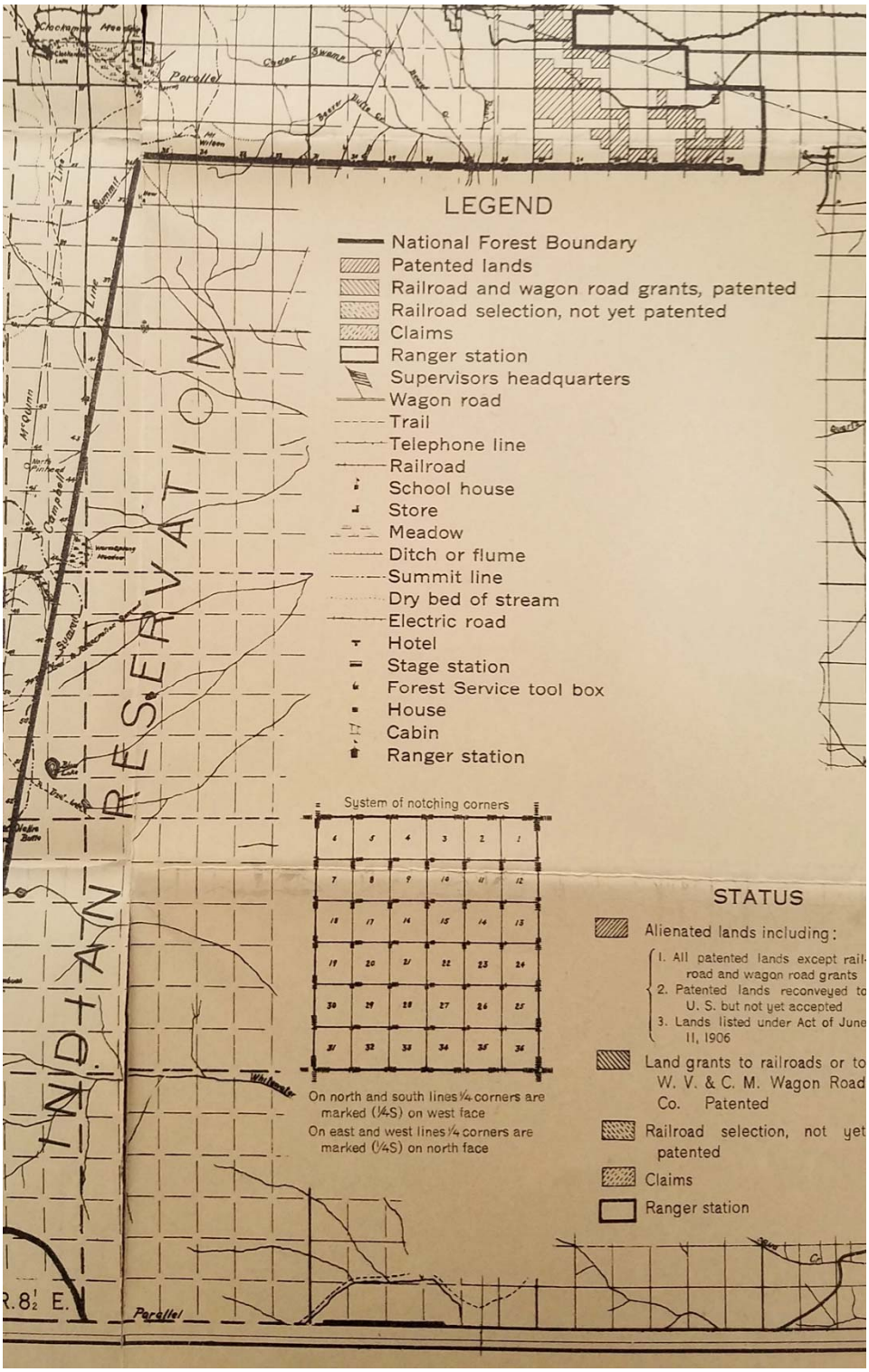

Illustration 6: Legend for the 1913 Oregon National Forest Map showing types of information depicted on map. The map reveals its heritage in the sheets of the *Forest Atlas* in the four different pattern overlays showing land alienations and claims, features later either eliminated or shown with color.

EAST HALF

RECREATION MAP

SANTA BARBARA NATIONAL FOREST

INFORMATION FOR MOUNTAIN TRAVELERS

AUTOMOBILE ROUTE MAP

OF THE

KLAMATH NATIONAL FOREST

CALIFORNIA

WELCOME

To the motorist, camper, hiker, and sportsman the national forests of California, which cover the greater part of the mountainous regions of the State from the Oregon line to the Mexican border, present unrivaled opportunities for every form of outdoor life and enjoyment. Splendid automobile roads, attractive camping grounds, beautiful scenery, and the freedom of the great outdoors are yours to enjoy. You are welcome to go where you please on public land, camp or picnic wherever the fancy strikes you, and stay as long as you like. Care with fire and proper camp sanitation, compliance with State laws, and respect for the property of private owners is required of all visitors.

The national forests are free to all, and you are cordially invited to become better acquainted with these great playgrounds of the Nation. In them you will find many of the finest motor highways and some of the best hunting, fishing, and camping grounds in the West. For your comfort and convenience the Forest Service has set aside improved public camp grounds at many points on the more traveled forest routes. Visitors are urged to use the facilities afforded by these free camps and thus help reduce the fire hazard due to human carelessness in the woods.

California District

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

A B

Illustration 7: Map covers for the highly detailed 1918 Santa Barbara National Forest Recreation Map published at 1:126,720-scale in two sheets (East & West halves) "A" and the 1919 Automobile Route Map for the Klamath National Forest "B" published with a scale of about 1:2,250,000. The text written for each map promoted fire safety in the national forests of California.

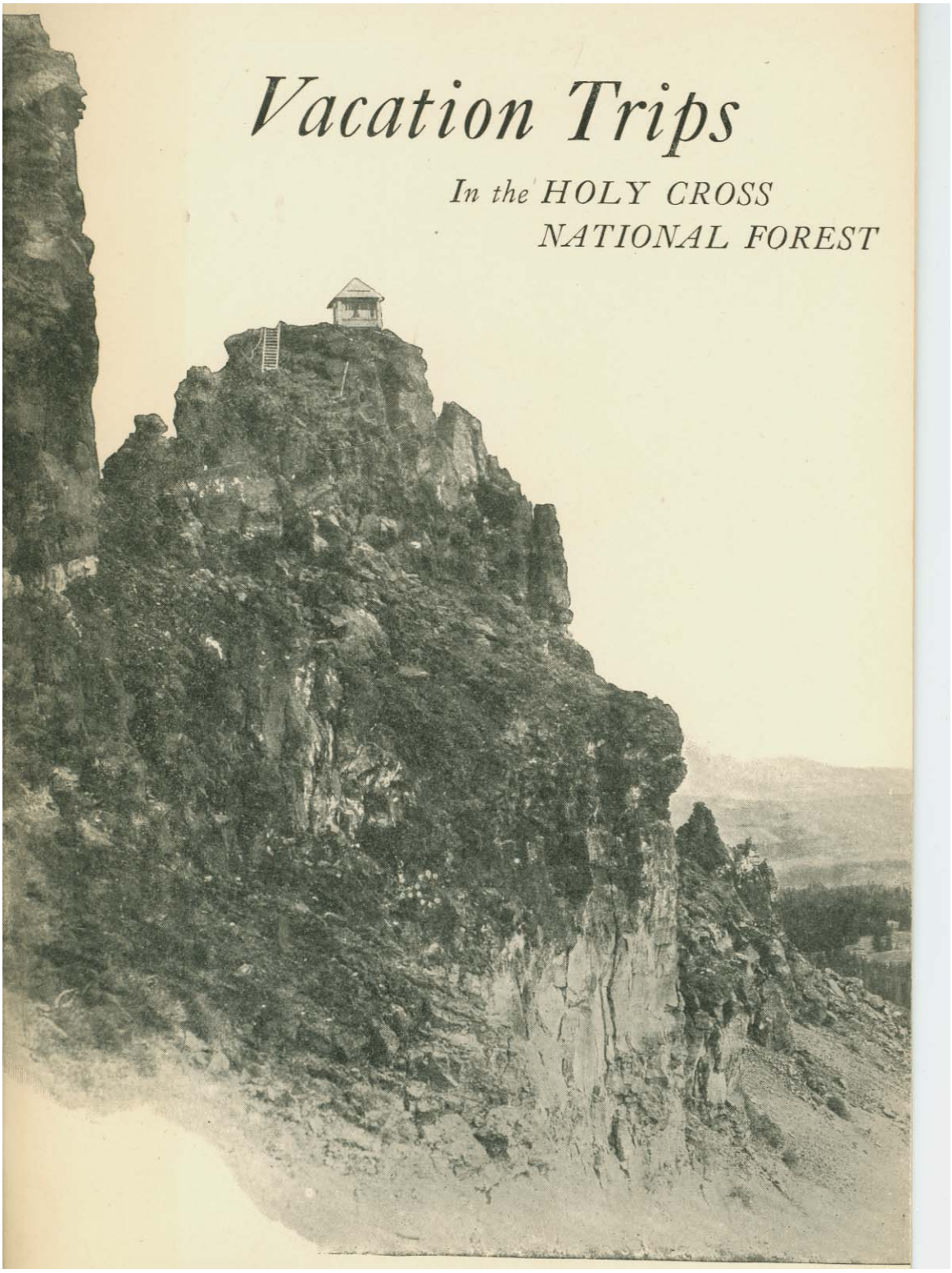

***Illustration 8**:* An example of a front cover of the booklet-type forest visitor publication issued in 1919 by District 2 for nine national forests in the District, plus one uniform to the series for the Superior National Forest in Minnesota, which, at the time, was part of and administered by District 2. Printed by the Government Printing Office, the booklets included a map of the forest inserted behind the booklet's back cover. The Holy Cross National Forest was discontinued in 1945 and all its lands transferred to the White River National Forest.

8. Forest Service Mapping Between the Wars, 1922-1941

For the first time beginning in 1922, the Forester included a section in the annual reports of the Forest Service dedicated to agency cartography in a section captioned, "Maps and Surveys." Until 1941, when the Forest Service along with the rest of the federal government transitioned to a war footing, this section charted the agency's shift from its reliance upon traditional surveying and mapping techniques based upon ground methods in the early1920s, to cartographic practices more and more reliant upon aerial photography. Paper administrative maps in ever increasing quantities continued to be produced at the standard engineering scales, while the Forest Service, for the most part, settled upon a scale of 1:253,440 for its forest visitor maps. As the public made more use of the national forests for recreation purposes the Forest Service issued not only more fully edited forest visitor maps complete with text and photographs, but also more ephemeral recreation folders, especially in the 1930s. Sheets of the *Forest Atlas* continued to be produced to fulfill needs in the District Offices. The Forest Service's 1930 annual report contains the last mention of any atlas sheets being produced, while, tellingly, the 1931 report was the first to optimistically state that two contracts were awarded to airplane companies to obtain mapping data required for the preparation of Forest Service maps and to support other tasks assigned to the agency.

Map accuracy steadily improved during this period even as Forester William B. Greeley lamented the fact that in 1922 only 20% of the national forest area of 181,799,997 acres was "accurately mapped." In this he was addressing the need for precise, detailed topographic surveys by the U.S. Geological Survey on which to base his agency's maps. Even so, map output by the Forest Service continued to expand as cartographic staff in the Districts and in Washington stabilized after World War I and staff in the field grew more accustomed to the routine of map revision. As Greeley wrote:

> "Ordinarily, maps are printed upon three scales—one-quarter, one-half, and one inch to the mile, depending upon the available and desired detail. All Forest Service men on field work carefully check up errors which appear upon the maps, note corrections which come to their attention, recommend to the United States Geographic Board names for unnamed topographic features, and currently gather new and more detailed data for inclusion upon the maps. After sufficient information has been secured to warrant a revision, new maps are prepared and published."[42]

Forest Service annual reports provide consistent numbers for the production of administrative maps, proclamation diagrams, executive order maps and, on the other hand, quite inconsistently gave quantities of an assortment of miscellaneous maps produced between 1926 and 1936. The reports did not include numbers detailing forest visitor or recreation map production. Map production numbers ceased being reported after 1936 just as aerial photography began to make a difference in the mapping program of the Forest Service.

[42] William B. Greeley, *Report of the Forester,* (Washington: Government Printing Office, 1922), p. 43-44.

Fiscal Year	Administrative Maps 1:253,440	Administrative Maps 1:126,720	Administrative Maps 1:63,360	Proclamation Diagrams Executive Order maps	FY Total
1924	45 total – all kinds				45
1925	59 total – all kinds				59
1926	30	23	0	0	53
1927	25	17	0	7	49
1928	28	18	2	5	53
1929	26	13	2	6	47
1930	13	12	3	10	38
1931	17	11	5	7	40
1932	18	25	6	11	60
1933	19	19	4	2	44
1934	17	17	3	5	42
1935	27	17	0	0	44
1936	39	65	5	0	109
Total Type	363	237	30	53	**683**

Table 2: Administrative and special map production, 1924 to 1936 as reported in Forest Service annual reports.

Not only were there more administrative maps being produced, they had larger print runs and were printed in a variety of editions. Based on the requirements of the District or, after 1930, the Regional Offices, some maps were printed only in black & white, like the 1,040 copies of the 1930 1:253,440-scale administrative map of the Datil National Forest of New Mexico. A green color overlay on a black and white base map, first used in 1910 on some maps and proclamation diagrams to show Forest Service owned lands, came to be more regularly applied to maps in the 1920s. Another type of map that was introduced in the 1920s was the "gray & white" edition more useful as base maps than were the bold black & white editions. For instance, the 1932 order by the Northern Region for 823, 1:126,720-scale maps for the Western portion of the Jefferson Division, Lewis & Clark National Forest in Montana called for 290 maps with green overlay on black & white base, 263 black & white maps, and 270 copies in gray and white. With the passage in 1922 of the law to consolidate national forest lands, more administrative maps and *Forest Atlas* sheets were printed with a color overlay showing private or "alienated" lands within the boundaries of the national forests on a black & white base. Alienated lands were typically shown with the color pink. In addition, administrative maps also later identified specific exchange areas within the national forests in response to congressional action that permitted land exchanges for private forest lands outside national forest boundaries. An example of this type of law was "An Act for the exchange of lands adjacent to the national forests of Montana" of January 30, 1929 (Public Law 70-694 – 45 Stat. 1145). For fire control, administrative maps of the 1930s were sometimes printed with a red compass rose, useful in locating fires from forest lookouts. Compass roses were quite common on the maps of the forests in the Intermountain and California Regions. Most 1:63,360-scale administrative maps included contour lines and were issued for ranger districts, several in Arizona, or other smaller portions of the national forest. Finally, Forest Service maps were being printed on a wider variety of papers, from tracing paper to card stock to clay coated papers. In the course of compiling the carto-bibliography, two black & white administrative maps were discovered printed on cotton cloth as well as on paper. More of these noteworthy, perhaps experimental cloth maps may exist, but the two found were the 1:253,440-scale map of the 1927 St. Joe National Forest in Idaho and a 1928 Deschutes National Forest in Oregon.

In 1936, the Chief of the Forest Service's Division of Engineering, T.W. Norcross issued a 31-page booklet entitled, *Forest Service Map Standards*. These standards represented a giant leap forward over the 1912 *Instructions for Making Forest Service Surveys and Maps* with its 10-page supplement *Signs, Symbols, and Colors*. Without text or even page numbers the 1936 *Map Standards* booklet presented a greatly expanded array of signs and symbols for cultural and physical features, boundaries, standard

lettering, a fire legend, a standard map title, and legend boxes for administrative maps. Also included for the first time were signs and symbols for the production of special maps covering range management, recreation, forest management, forest roads, proclamation diagrams and maps, federal land ownership, and for the first time, an "Air Navigation Map Legend" to be used on administrative maps. Most administrative maps issued after the release of the 1936 standards incorporated the conventional signs and symbols as well as the lettering and framing conventions found in the *Standards* booklet. The result was a more up to date and elegant appearing map. Even maps issued before 1936 exhibited the newly enlarged repertoire of signs and symbols, as well as the newly formatted text blocks. Many of these had been used before they were all brought together in the 1936 *Map Standards* booklet.

The North Pacific Region pioneered the publication of maps of individual ranger districts in the 1930s. A ranger district map was made by extracting a portion of the latest edition of an administrative map, either the ½-inch (1:126,720) or the ¼-inch (1:253,440) maps as a base and reprinting that portion to cover a ranger district. Only a few national forests of Oregon and Washington lacked full sets of ranger district maps and a few forests, like the Columbia, Mt. Hood, Siuslaw, Snoqualmie, and Wenatchee, had two different editions of maps published before the start of World War II. These ranger district maps were most often issued in black & white, however the Malheur National Forest issued a set of ranger district maps with forest visitor information printed in a red overlay. All were issued on small sheets measuring 8 ½ by 11 inches. The Northern Region constructed ranger district maps for its Coeur d'Alene (1940) and Deerlodge (1939) National Forests, but it was the North Pacific Region that produced the most pre-war ranger district mapping. It is important to note the beginnings of ranger district maps as their production quickly spread to other regions after the war to become important parts of the cartographic program of the Forest Service.

While the U.S. Geological Survey continued to be the agency that printed the most Forest Service maps during this period, government printing capacity released after the end of World War I through demobilization allowed more maps to be printed by the presses of the U.S. Army Corps of Engineers. The first maps printed by the Corps of Engineers between the years 1920 and 1934, were noted as being printed by the "Engineer Reproduction Plant, U.S. Army, Washington Barracks, DC." The plant was located on the grounds of what is now known as Ft. Belvoir in Virginia. Maps being printed from 1935 to 1939 carried the notation, "Engineer Reproduction Plant, U.S. Army, Fort Humphreys, DC, and from 1939 to 1942 as the "Engineer Reproduction Plant, The Army War College, Washington, DC." The Government Printing Office and a variety of its contractors printed forest visitor maps for the public. Besides the GPO itself, these contractors included The Columbia Planograph Co., The Norris Peters Co., Lithographers, Williams-Webb Co., and Williams & Heintz Co., of Washington, DC and the lithographer, A. Hoen & Co., of Baltimore, Maryland. The latter two printers were contracted by the Forest Service to print administrative maps as well. Foreshadowing a move of the Regional Offices to arrange their own printing, quite common after World War II, the Southwestern Region contracted with the Smith-Brooks Press of Denver to print six administrative maps for the Region all dated 1941. After the war, the Forest Service increasingly turned to local commercial printers for map printing.

A. **Topographic Mapping**

If there was one theme running through Greeley's reports on Forest Service mapping in the 1920s, it was the need for accurate topographic surveys of the national forests. Adding topography from U.S. Geological Survey quadrangle maps to Forest Service maps made for a more useful and versatile spatial tool, especially when geodetic control points came as standard feature of the Geological Survey quadrangle map. As Forester Greeley wrote:

> "The foundation essentials for accurate maps are precise, detailed topographic surveys. These surveys are executed by the United States Geological Survey after the Coast and Geodetic Survey has extended the necessary judiciary control. Small fragmentary sections of the forests have from time to time been mapped by the Forest Service in connection with timber sales or other activities which require immediate data. The service cooperates with and assists the Geological Survey in every possible way, including financial aid whenever available, in surveying and mapping the national forests.[43]

Despite the surveys conducted by the Forest Service, the basic need remained for accurate topographic maps produced by the Geological Survey. In 1924 the Congress considered increasing topographic map production with the Temple Act or "An Act to provide for the completion of the topographical survey of the United States." The law called for the completion of topographic mapping of the United States in twenty years with adequate horizontal and vertical control and the publication of the resulting maps by the federal agencies that then existed. It also allowed the federal mapping agencies to enter into cooperative agreements with the states or municipalities to complete topographic mapping within their borders. The Temple Act passed and was signed into law on February 27, 1925 with the support of the Forest Service, the Geological Survey, and other agencies. However, it was never funded. Greeley noted:

> "After passage of the Temple Act (Public Law 68-498 – 43 Stat. 1011) in February [27], 1925, it was hoped that considerable progress would be made in mapping the national forests. The bill authorized but did not appropriate funds. Subsequent appropriations by Congress have been insufficient to permit of any new mapping of Federal projects other than those on which State cooperation is obtainable. This has excluded all new national forest projects. It is estimated that 46 per cent of the area of the national forests has been topographically surveyed to a standard which is at present satisfactory. The remaining 54 per cent, or approximately 99,000,000 acres, is in need of accurate topographic surveys. Topographic maps of the forest constitute an essential administrative tool in connection with plan-wise development and satisfactory utilization of resources, and efficient protection, and some way for making more rapid progress in obtaining these maps is an urgent need."[44]

The Forest Service continued to make its own topographic surveys covering individual projects, such as timber sales, land exchange, road projects, and river basin mapping. The agency also continued to gather new topographic mapping as produced by other federal or state agencies. For instance, in the same annual report for 1926, Greeley noted that a cooperative agreement between the state of Montana and the General Land Office was initiated to produce a standard topographic survey of each township whenever the GLO made a new or revised township plat. The state and the GLO shared this new mapping with the Forest Service.

B. The Beginnings of the Forest Service Aerial Photography Program

Disappointed by the failure of Congress to appropriate funds to fulfill the promise of the Temple Act yet remaining steadfast in support, Greeley in his annual report for the 1927 fiscal year, his last, cited another cooperative means to obtain accurate data for forest mapping:

---

[43] William B. Greeley, *Report of the Forester,* (Washington: Government Printing Office, 1922), p. 43.
[44] William B. Greeley, *Report of the Forester,* (Washington: Government Printing Office, 1926), p. 40.

"The photographic survey made by the Navy Department by airplane embraced practically all of southeastern Alaska except Baranof and Chichagof Islands. The photographs were taken at an altitude of approximately 10,000 feet, and are on a horizontal scale of approximately 1,660 feet to the inch [about 1:20,000-scale]. Arrangements have been made with the Navy Department and the Geological Survey whereby prints of these photographs may be purchased by the public. The map that is being compiled by the Alaskan branch of the Geological Survey from these photographs will be on a horizontal scale of 1:180,000, or approximately 15,000 feet to the inch.

"In connection with the aerial fire patrol in Idaho, an aerial photographic survey covering about 64 square miles in the Kaniksu National Forest was conducted for experimental purposes. A K-3 single-lens camera was borrowed from the Army Air Corps. The area was photographed from an altitude of approximately 10,000 feet. A serviceable mosaic map on the scale of 6 inches to the mile was made from the photographs."[45]

The data collected by the pioneering aerial photography project of the Navy was later used by the Alaska Region of the Forest Service as baseline data to produce a set of blueline photomaps of the Tongass National Forest between 1934 and 1938. The smaller photographic survey of the Kaniksu in Idaho was extended to the Nezperce National Forest in 1929. Forester, Robert Y. Stuart, did not lament the lack of U.S. Geological Survey topographic mapping of the national forests in his annual reports as his predecessor Greeley had done. Rather, he seemed energized in his first report in 1928 to write that "An aerial survey of a portion of the Nezperce National Forest in Idaho was started, but inclement weather and condemnation of the airplane used for the work shortly after it was initiated forced its abandonment. The results secured, however, gave evidence that this method of mapping forest areas has decided promise."[46]

Aerial mapping had its beginnings in World War I when topographers serving with the U.S. Expeditionary Forces in France made use of airplane photographs in correcting old maps and making new ones along the changing battle fronts. In 1919, the Schoolcraft, Michigan area was photographed using a K-1 single-lens camera by the Army Air Corps and by using a variety of improvised methods, U.S. Geological Survey topographers were able to reduce the photographs to a uniform scale of 1:48,000, map all two dimensional or planimetric features, and finally add topographic contours to the 15-minute quadrangle. The Schoolcraft Quadrangle became the first USGS topographic map to be produced from aerial photographs. The methods used were still experimental, but aerial photography held out the promise of becoming a faster more efficient method of obtaining field data for mapping and other resource management purposes.

By 1931, the Forester announced in the annual report that: "Two contracts were awarded to airplane companies to obtain mapping data required for the preparation of Forest Service maps. This method of obtaining survey data should prove economical for large-scale maps."[47] Not only did the Forest Service rapidly adopt the use of aerial photography in the 1930s, but so did most every mapping and resource agency of the federal government. In its need for highly accurate and large-scale mapping, the Tennessee Valley Authority, created in May of 1933, turned to the U.S. Geological Survey for assistance. Time limitations and the extensive area involved gave the Survey an opportunity for an all-out test of aerial photography in this monumental mapping project. Technological advancements in stereo and multiplex mapping equipment led to a complete revolution in mapmaking procedures for the Survey and for other federal map making agencies. It was no coincidence that the American Society of Photogrammetry was

[45] William B. Greeley, *Report of the Forester,* (Washington: Government Printing Office, 1927), p. 39.
[46] Robert Y. Stuart, *Report of the Forester,* (Washington: Government Printing Office, 1928), p. 47.
[47] Robert Y. Stuart, *Report of the Forester,* (Washington: Government Printing Office, 1931), p. 56.

incorporated in Washington, D.C. in 1934, with leadership drawn from the ranks of the federal civil service, notably, from the Geological Survey's Topographic Branch.

Because of its remarkable versatility, the Forest Service quickly embraced aerial photography. Aerial photography was not solely used for mapping purposes. In 1936, Chief Silcox noted:

> "In compiling the maps the available data of other government agencies are used. Where adequate data are not available and cannot be supplied within a reasonable time by the regular mapping agencies of the government, the necessary surveys are made by the Forest Service. Aerial photographs are being used extensively. They are valuable also for determining fuel and forest type in fire-control studies, for range investigations, and for studying slopes in erosion control; and they are used by lookouts, rangers, and others to aid in locating reported fires and to determine the cover type and topographic conditions where a fire is reported. All flying has been done under contract with private concerns. In some cases the cameras and photographers belong to the Forest Service."[48]

The total number of square miles contracted by the Forest Service to be flown each year rose and fell during this period from the mid-1930s to 1941, but maintained a steady pace. By July 1, 1941, the Forest Service had obtained aerial photography coverage for over 114,421 square miles or 73,229,440 acres, equal to 41% of all national forest land.[49] However, compilation narratives on Forest Service maps do not give credit to photogrammetric methods, either for new or revised maps, but there are a few exceptions. The photomaps produced by the Alaska Region have already been mentioned. The Rocky Mountain Region produced a series of 21 large format planimetric quadrangles with hachures at 1:63,360-scale for four of its national forests, namely the Medicine Bow (1937), Routt (1938), San Isabel (1940), and Uncompahgre (1939), using aerial photographs. These were unpublished in preliminary blackline prints. A special feature of these maps was that the verso of each quadrangle carried numbered photo centers for the aerial photographs used in their compilation, creating a ready-made index to the aerial photography. The numbers were printed backwards in blue, so when the map was placed face up on a light table, the photo center number was readable through the map. In November of 1941, the Surveys and Maps Branch of Region 2 "constructed" a pair of controlled photo mosaics of the Bessey and the Niobrara Divisions of the Nebraska National Forest. The photomaps show the national forest boundaries, public land grid, roads, trails, railroads, Forest Service administrative facilities and other structures, windmills, camps, ranches, walls, and lookout stations. These two examples of mapping from aerial photographs from the Rocky Mountain Region clearly show how far and how fast the Forest Service had adopted aerial photography.

Laboratories and other facilities as well as technology for processing the huge quantities of photography kept pace with the increased reliance upon aerial photography. The Forest Service was clearly on the cutting edge of adapting aerial photography to their mission. Chief Silcox proudly stated in his 1936 annual report:

> "The Forest Service has one of the best equipped photographic laboratories in Washington, and has photostat, blueprint, and multilith equipment in most of the regional offices. In addition to Forest Service work, most of the photographic work for the Resettlement Administration has been done in Washington and some of the regional offices. The photographic work accomplished during the year comprised 995,904 square

[48] Ferdinand A. Silcox, *Report of the Chief of the Forest Service, 1936,* (Washington: Government Printing Office, 1936), p. 21.
[49] Square miles of aerial photography flown for 7 years between 1936 and 1941 in Forest Service's annual reports.

> feet of blueprints, 558,197 square feet of blue-line prints, and 600,284 square feet of black-line prints; 173,213 square feet of Van Dykes; 30,596 square feet of solar bromide prints; 434,466 square feet of photostats; 100,013 square feet of map mounting; and 153,096 prints of photo views."

And that:

> "At Forest Service photographic laboratories in Washington, in addition to the regular work, photographic requisitions are filled for 12 other government bureaus." [50]

Technological advances made by the federal government, especially involving stereo photographic plotting machines and multiplex projectors, made mapping of land features independent of elevation (planimetric elements) and topographic mapping faster and more accurate. The American Society of Photogrammetry developed standard specifications for aerial photography, which were adopted as standard government specifications by the U.S. Treasury Department's Procurement Division. These standards made aerial photography contracting easier and more efficient. The Society also issued precision mapping camera specifications and map accuracy standards that were also adopted by the profession. The stage had been set for photogrammetry to assume an even larger presence in mapping and resource management. The Forest Service had positioned itself well with facilities, equipment, and trained staff to take advantage of these advances during and after the war.

C. Maps for the Forest Visitor

Maps made by the Forest Service for the forest visitor was an important part of the recreation policy of the agency. The maps were both practical, showing roads, trails, campgrounds, and other visitor facilities, as well as instructional, communicating the policies, priorities, and the conservation philosophy of the Forest Service. The Forest Service produced a variety of maps for the visitor, the most common being the folded recreation map of an individual forest using the standard 1:253.440-scale "¼ inch" base map. A surge in the production of visitor maps began in 1925. All Districts of the Forest Service saw an increase in this type of map. The reason for the increase is not difficult to find. Forester William B. Greeley wrote in his annual report for the fiscal year ending June 30, 1924 that "The number of people visiting the national forests for recreation is estimated each year by the local forest officers…The Total number of visitors reported last year exceeded 10,500,000. In less than ten years the number has more than tripled."[51] The increase in recreation use was due to the greater accessibility to the national forests made possible by more and better roads and expanding automobile ownership. Greeley continued by writing that the estimate of the number of people visiting the national forests can only be an approximate one, but that "The main point is that recreational use of the forests has assumed staggering proportions, and is rapidly increasing. A corresponding administrative responsibility is involved."[52] An appropriate and corresponding result of increased use of the national forests by the public was to issue more information about the national forests along with the rules and regulations to insure their proper use. What better vehicle than the folded forest map with descriptive text, rules, and illustrations on the back. In the same annual report, under the heading "Maps and Surveys" Greeley wrote, "Forty-five maps of national forests, on various scales were compiled and printed. Though made primarily for administrative use these maps are of considerable value to the public, with a resulting demand for them often greater than can be met. Authority to sell maps and use the receipts to meet the cost of printing larger supplies

[50] Ferdinand A. Silcox, *Report of the Chief of the Forest Service, 1936,* (Washington: Government Printing Office, 1936), p. 7 and p. 16.
[51] William B. Greeley, *Report of the Forester,* (Washington: Government Printing Office, 1924, p. 25.
[52] *Ibid.*

would be advantageous." [53] Lacking a forest visitor map, administrative maps were often given away despite modest print runs.

The First National Conference on Outdoor Recreation held in Washington, D.C. from May 22nd to May 24th, 1924 did not specifically recommend an increase in recreation map publishing, but it did draw the public's attention to the need for more tourist facilities, public education, and coordination among various government agencies in the use of the public domain. Table 3 details the jump in forest visitor map production beginning in 1924, which was sustained, right into the early years of the Depression era when numbers began to fall.

REGIONS	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN	TOTAL
1922	3	1	1	1	0	4	0	n/a	n/a	0	10
1923	0	1	0	0	2	14	0	n/a	n/a	0	17
1924	2	10	7	1	0	9	3	n/a	n/a	0	32
1925	3	11	0	1	1	8	1	n/a	n/a	0	25
1926	5	0	3	1	6	3	3	n/a	n/a	0	21
1927	2	4	2	0	3	3	4	n/a	n/a	0	18
1928	5	6	3	0	7	5	4	n/a	n/a	0	30
1929	1	1	3	1	4	0	4	n/a	0	0	14
1930	2	4	4	2	3	6	4	n/a	0	0	25
1931	1	3	2	4	3	11	2	n/a	0	0	26
1932	1	4	1	3	3	4	2	n/a	1	0	19
1933	0	2	0	2	3	2	1	n/a	1	0	11
1934	0	4	2	3	0	4	0	0	0	0	13
1935	3	2	1	4	3	1	0	0	0	1	15
1936	0	0	0	5	2	0	3	3	1	0	14
1937	3	2	0	3	2	1	0	11	5	1	28
1938	0	4	1	1	1	3	4	5	6	1	26
1939	1	4	1	2	3	1	2	4	2	1	21
1940	1	3	1	1	7	5	3	3	3	1	28
1941	0	6	2	3	2	0	1	2	2	0	18
1942	0	2	1	1	3	1	0	0	1	0	9
TOTAL	33	74	35	39	58	85	41	28	22	5	**420**

Table 3: Number of visitor maps published for entire forests, states, or regions in a folded format by region and by year of publication. Excludes ephemeral and recreation guide maps. Region 2 included the national forests of Minnesota, Michigan, and Wisconsin until 1929. Region 7 included the southern states (Region 8) until 1934.

Forest Service staff most often enhanced the "4 - inch" administrative maps with black and white or color overprinting detailing roads, campgrounds, picnic areas, and other attractions. Once again, the decentralized administrative structure insured variations based on local conditions. Not every forest visitor map from this period was based on the 1:253,440- base map. For instance, the Southwestern District opted for a sketch map of the forest highlighting recreation information alongside a smaller-scale vicinity map of a larger area showing the forest in a context of highways, railroads, and cities. The Sitgreaves National Forest, a small forest relative to the others in the Southwestern District, issued a forest visitor map in 1930 at 1:253,440-scale, but due to large average size and dispersed nature of the national forests in Arizona and New Mexico, smaller scale maps were initially chosen by cartographers in Albuquerque. Each Region also had its own array of special maps issued together with its maps of the national forests. Region 6 produced a series of state highway maps for Oregon and for Washington as did Region 5 for California. There were also maps issued for the various national monuments

[53] *Ibid,* p. 33.

administered by the Forest Service at that time, such as Oregon Caves, Bryce Canyon, and Chiricahua. The Government Printing Office printed the majority of these folded national forest and special maps and as such, the maps were automatically included in the depository library program run by the GPO affording the maps wide distribution.

The ever changing boundaries and names of the national forests challenged Forest Service staff facing the question of what to do with their stock of forest visitor maps after the national forest had changed its name or had been merged with another. During this period quite a few national forest visitors' maps bore hand stamped corrections or pasted overlays on map titles to account for name or boundary changes, as when the Colorado National Forest became the Roosevelt or the Crater National Forest became the Rogue River. The supply of forest visitor maps of the Lewis and Clark National Forest issued in 1930 was corrected in 1932 by a glued typescript half sheet over page two in the text stating that the map only covered a portion of the Lewis and Clark after the Jefferson National Forest had been added to it. The 1930 map only showed the Rocky Mountain portion of the merged forests. After such changes, administrative maps were often quickly revised and reissued. But supplies of recreation maps first had to be exhausted before new editions were prepared, thus the necessity of these improvised measures at updating. The geography of the national forests was, even during the interwar period, still very much a work in progress.

D. Recreation Maps and Map Booklets

The coming of the New Deal brought more variations on the agency's forest visitor map program as the Forest Service and other bureaus of the federal government sought to promote domestic travel and tourism. To that end, several regions of the Forest Service issued a variety of recreational maps not just the standard 1:253,440-scale folded visitor maps covering one national forest. The Forest Service hired workers enrolled in the Roosevelt administration's Work Progress Administration and other federal employment programs and had them quickly turn out text, artwork, and utilitarian mapping for smaller Forest Service administrative units, such as primitive, scenic, and popular recreation areas. These were much less finished in appearance than the standard national forest visitor map. These visitor maps came printed on a lighter weight paper and were easily revised and often reprinted. However, not all regions issued an ephemeral recreation map series. The most extensive was the "Recreation Guide Series" published by Region 6 out of its Portland, Oregon headquarters. The North Pacific Region issued two sets of guides: a series of 29 folders for recreation areas of Washington State and another series of 41 folders for those areas in Oregon (see below Illustration 9). Because of their temporary nature, not all proposed numbers were issued so these total numbers are speculative based on actual maps found. The Southern Region and the North Central Regional also published their own recreation map series often simply because fully edited ¼-inch national forest maps had not yet been issued by the Regional Office. But here the visitor maps covered an entire national forests not smaller areas of recreational interest. The ambitious and rapid pace of the purchase program under the Weeks Law of 1911and its amendments in Regions Eight and Nine presented cartographers with ever changing boundaries. Any map issued for the national forests in these regions almost instantly became out of date. Therefore, forest visitor maps of the national forests in these regions during the 1930s were best quickly made, revised, and reissued. The California Region did not have a stand-alone recreation map series but many of the maps issued for the public covering one entire national forest during the 1930s were entitled "Recreation Map…" and carried a sketchier smaller scale map within a much larger text section. The Northern Region issued only a few recreation maps and these carried lively drawings of game animals and natural features. The Southwestern Region produced several travel publications for the forest visitor to the region's national forests, especially the Carson and Santa Fe. These mimeographed publications contained road logs, a sketch map, and some text addressing the history of the area traversed by the tours. These tours were

later combined with other tours for all forests in the Southwestern Region, and printed together in the 1940 publication, *"Short Trips to – National Forests in the Land of Coronado."* This publication was issued on the occasion of the 400th anniversary of the entrada of Francisco Vázquez de Coronado into what became the southwestern United States in 1540-1542.[54]

The less polished recreation maps of the 1930s stand in contrast to another form for forest visitor publication, the booklet style publication (see below Illustration 10). These booklets grew out of the Forest Service booklets of the 1910s and 1920s that were usually issued in one or more of the U.S. Department of Agriculture publication series, such as the USDA *Departmental Circulars* or Forest Service *Bulletins*, which were chiefly text publications that frequently included a map. The booklets issued by the Rocky Mountain District and then discontinued in favor of the ¼-inch scale folded forest visitor maps can also be seen as part of the booklet style tradition that was carried into the 1930s (see above Illustration 8). The first of this period's national forest booklets came from the Eastern Region in 1932. Entitled, *Eastern and Southern National Forests: Timber Farms – Outdoor Playgrounds – Watershed Protection*, the booklet had 18 pages of descriptive text and black & white illustrations with a map inside the back cover. The Government Printing Office printed every one of the forest visitor booklets and as a consequence, all were widely distributed to the nation's depository libraries.

Due to size restrictions, the map found folded in the back of the booklets all have a smaller scale and appear less finished and complete in contrast to the ¼-inch folded forest visitor maps. By editing out information not useful to the tourist and highlighting the features and forest improvements on the map that were important, these maps were a practical and effective geographic tool for the auto camper or tourist, but not for avid hikers to the back country. Over the years, the maps often became separated from the booklet. This makes them less useful without the supporting text. This style of booklet ceased publication in 1943 with the publication of the Cache National Forest booklet, but was resurrected after the war, especially by the Intermountain Region, the last one being issued by that region in 1952 for the Wasatch National Forest. In 1948 the Intermountain Region published a 17-page information booklet for the Caribou National Forest without the customary map tipped in behind the back cover. In the same year a separate folded forest visitor map resembling those found in the typical map booklet with a blank reverse side, was issued for the Caribou. The geographically extensive Caribou National Forest yielded a very large map that did not easily fit and could not be supported behind the paper back cover of the booklet. Thus both were published separately. Booklet style publications were printed and distributed by all Forest Service regions except for the Northern, California, and North Pacific Regions. The Southern and North Central Regions issued a single booklet for all national forests in the states of Florida and Michigan respectively. The Caribbean National Forest in Puerto Rico published a booklet in 1936 and again in 1940, the only forest visitor publications or maps issued for this unique tropical national forest.[55] There would have been more of the booklet style publications for individual national forests had not World War II intervened.

E. Two Noteworthy Forest Service Illustrators

Two illustrator-cartographers hired by the Forest Service in 1937 deserve particular mention: Harry L. Rossoll and Thomas Speiden Culverwell. Henry Rossoll (b.1910) began his career as an illustrator in the Forest Service's Southern Regional office in Atlanta, adding drawings to the Region's *Recreation Guide*

[54] These special regional recreation series of maps and publications are examined in detail in each regional chapter of this work.

[55] In 1905, the Bureau of Forestry under Gifford Pinchot published its Bulletin 54, a 52-page description of the Luquillo Forest Reserve, the predecessor to the Caribbean National Forest (since 2007 the El Yunque National Forest), with a map folded inside the back cover.

series. An example of his pre-war work for the Ocala National Forest recreation map is found below (see Illustration 11). Like many Forest Service employees, Rossoll joined the armed forces at the outbreak of World War II, serving in the Navy until 1944, when he rejoined the Forest Service in Atlanta. He is most famous for his more than 1000 "Smokey Says" newspaper cartoons which helped make Smokey Bear an almost universally recognized symbol of wild fire prevention and one of the most successful public relations campaigns ever conducted by a federal agency. While he is most remembered for his Smokey Bear illustrations, his artwork can be found on many of the panel illustrations decorating the covers of forest visitor maps of national forests of the Southern Region. His one map credit was a pictorial map he drew of the Ouachita National Forest, Arkansas, in 1940. In 1967, Rossoll drew a remarkable pictorial guide map of the Kiamichi Mountain area, including the Kiamichi Division of the Ouachita National Forest for the Talihina Lions Club of Oklahoma. After retiring from his position as "Visual Information Specialist" with the Forest Service in 1971, he was asked to paint 14, 7 x 25 foot dioramas for the Forest Heritage Center Museum in Beavers Bend State Park near Broken Bow, Oklahoma. The murals, which required 12 years to complete, illustrate such subjects as prehistoric forests, the local Caddo Indians, papermaking in the South, 1940's lumbering, and forest appreciation. Harry Rossoll died in 1999 at his home in Atlanta.

The Eastern Region also hired an illustrator-cartographer about the same as the Southern Region hired Rossoll. Thomas Speiden Culverwell (b. 1902) had put his artistic gifts to use well before joining the Forest Service by regularly supplying illustrations, comics, and political cartoons for Washington, DC newspapers, particularly the *Washington Daily News.* Culverwell created and brought to life such memorable characters as Senator Fuller Bunk and a young mischievous lad, Tim Tinker, in a 1920s comic strip. A 1937 entry in the Washington city directory recorded his occupation as that of a draftsman working for the Forest Service for the first time. Culverwell was responsible for several remarkable pictorial maps of the national forests of the Eastern Region. His pictorial maps of the Allegheny, George Washington[56] (see below Illustration 12), Green Mountain, Monongahela, and White Mountain National Forests reached such a high stage of refinement and artistic accomplishment for the genre not seen before or since in Forest Service recreation maps. All were drawn before World War II, but a few remained in print long afterward. The last printing of one of his pictorial maps was of the White Mountain National Forest map reprinted in 1962. During the Second World War, Culverwell served with the Office of Strategic Services, the predecessor of the Central Intelligence Agency, in China and India. While stationed in Washington, DC, he prepared topographic models and military maps. He returned to the Forest Service after the war as an illustrator and created many posters promoting on the job safety. He also drew safety-themed illustrations for Forest Service calendars in the 1950s. He retired to the coast of Maine in 1956 where he drew maps for the Potomac Appalachian Trail Club, of which he was a long-time member. Culverwell will be best remembered for his 1969 visitor map of Mount Desert Island, which was distributed for many years by the Bar Harbor Chamber of Commerce. He died in his home at Southwest Harbor on Mount Desert Island in 1977.

[56] The George Washington National Forest was part of the Eastern Region at the time Culverwell drew his pictorial map.

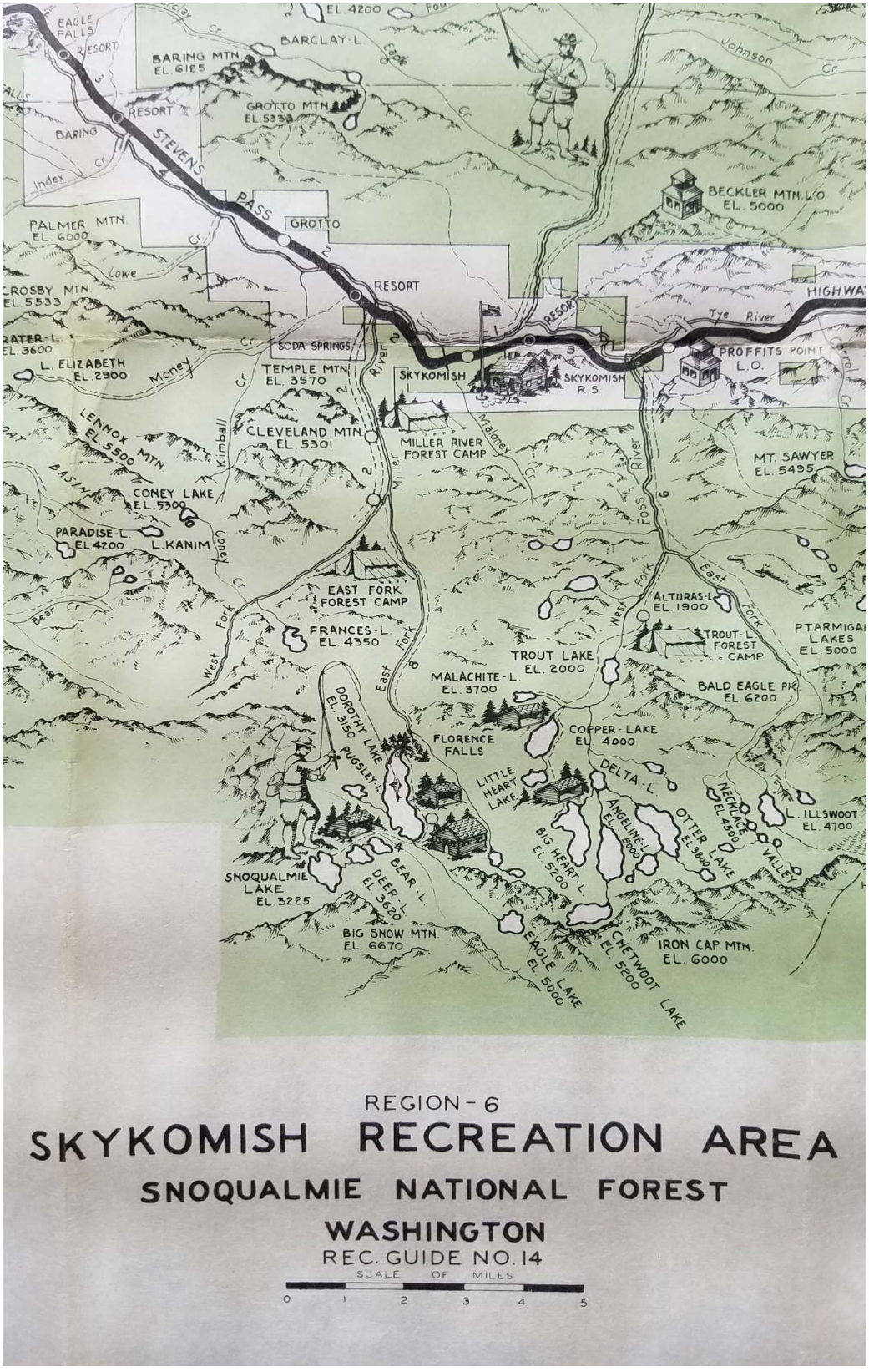

Illustration 9: Detail and title block for *Recreation Guide No. 14 – Washington, Skykomish Recreation Area, 1936* published by the North Pacific Region (Region 6). It was compiled by "F.G." in the Seattle Headquarters of the Snoqualmie National Forest. Relief and principal tourist and Forest Service infrastructure is shown pictorially. The main highway is U.S. Route 2, the Stevens Pass Highway.

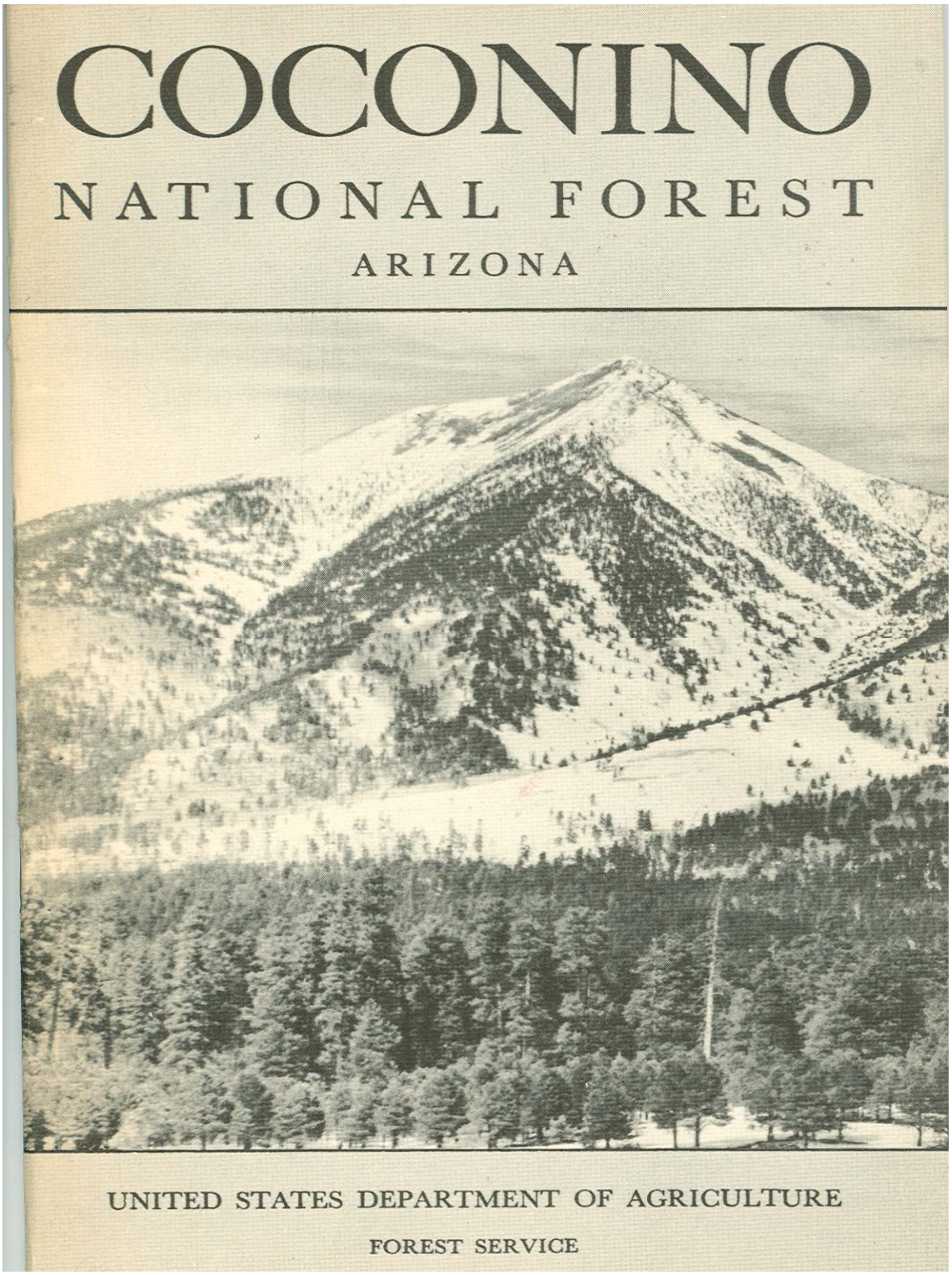

***Illustration 10**:* An example of the booklet style publication with a map tipped in behind the back cover produced for the forest visitor. This 1939 example for the Coconino National Forest carries a photograph of the San Francisco Peaks north of Flagstaff, Arizona on its front cover.

***Illustration 11*:** Artwork from the early career of illustrator Harry Rossoll, who made Smoky Bear famous with his "Smoky Says" cartoons. These illustrations are from the title and back cover of the 1937 Recreation Guide to the Ocala National Forest drawn by Rossoll. After serving in World War II, Rossoll rejoined the Forest Service in Atlanta in 1944, where he went on to supply cover art to many of the forest visitor maps and booklets issued for national forests of the Southern Region. His signature appears below the canoe on the left and the deer on the right.

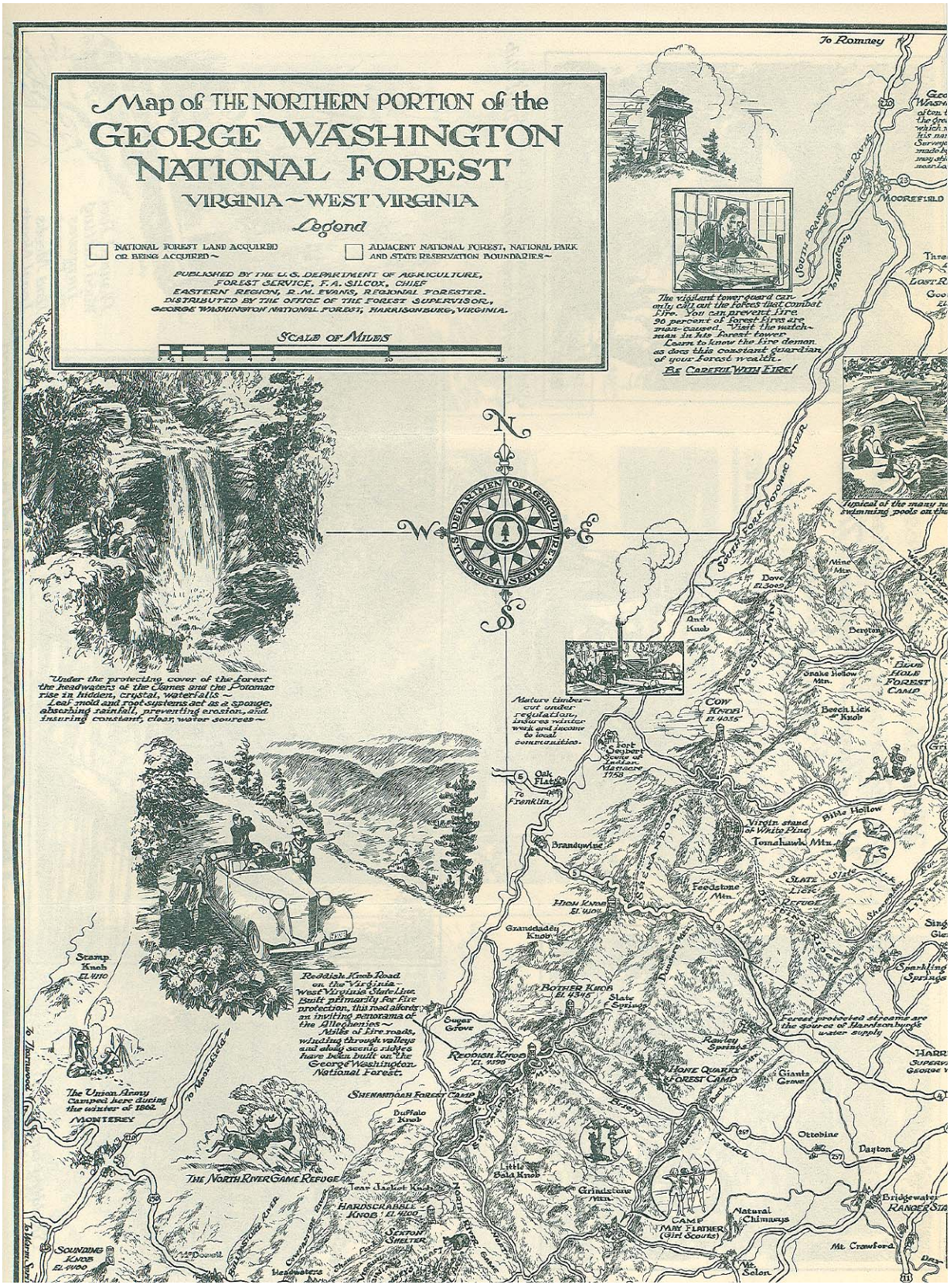
Map of THE NORTHERN PORTION of the
GEORGE WASHINGTON
NATIONAL FOREST
VIRGINIA ~ WEST VIRGINIA
Legend
NATIONAL FOREST LAND ACQUIRED OR BEING ACQUIRED ~
ADJACENT NATIONAL FOREST, NATIONAL PARK AND STATE RESERVATION BOUNDARIES ~
PUBLISHED BY THE U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, F.A. SILCOX, CHIEF
EASTERN REGION, R.M. EVANS, REGIONAL FORESTER.
DISTRIBUTED BY THE OFFICE OF THE FOREST SUPERVISOR, GEORGE WASHINGTON NATIONAL FOREST, HARRISONBURG, VIRGINIA.
SCALE OF MILES
To Romney
MOOREFIELD
South Branch Potomac River
To Petersburg
The vigilant tower guard can only call out the forces that combat fire. You can prevent fire. 90 percent of forest fires are man-caused. Visit the watchman in his forest tower. Come to know the fire defender as does this constant guardian of your forest wealth.
BE CAREFUL WITH FIRE!
Typical of the many swimming pools on the
South Fork Potomac River
Under the protecting cover of the forest the headwaters of the Cohmas and the Potomac rise in hidden, crystal, waterfalls ~ Leaf mold and root systems act as a sponge, absorbing rainfall, preventing erosion, and insuring constant, clear, water sources ~
Mature timber ~ cut under regulation, insures winter work and income to local communities.
Mine Mtn.
Dove El. 3069
Ann Knob
Bergton
Blue Hole Forest Camp
Snake Hollow Mtn.
Cow Knob El. 4035
Beech Lick Knob
Fort Seybert Scene of Indian Massacre 1758
Oak Flat
To Franklin
Virgin stand of White Pine
Tomahawk Mtn.
Pittle Hollow
Brandywine
Slate Lick
Slate Lick Refuge
Fecstone Mtn.
High Knob El. 4101
Grandadden Knob
Sparkling Springs
Stamp Knob El. 4110
Reddish Knob Road on the Virginia-West Virginia State line. Built primarily for fire protection, this road affords an inviting panorama of the Alleghenies ~ Miles of fire roads, winding through valleys and along scenic ridges have been built on the George Washington National Forest.
Bother Knob El. 4345
Slate Springs
Sugar Grove
Reddish Knob El. 4398
Forest protected streams are the source of Harrisonburg's water supply
Rawley Springs
Stone Quarry Forest Camp
Giants Grove
To Thornwood
To Moorefield
The Union Army Camped here during the winter of 1862.
MONTEREY
Shenandoah Forest Camp
Buffalo Knob
Ottobine
Dayton
Little Bald Knob
Grindstone Mtn.
THE NORTH RIVER GAME REFUGE
Bear Lick Knob
HARDSCRABBLE KNOB El. 4100
Natural Chimneys
CAMP MARY FLATHER (Girl Scouts)
Bridgewater
RANGER STA.
Mt. Crawford
Mt. Solon
SOUNDING KNOB El. 4100
Shenandoah River
Middle River
North River
Cowiche Creek
Dry River
Hawksbill Creek

Illustration 12: The northwestern portion of the 1938 pictorial *Map of the Northern Portion of the George Washington National Forest, Virginia-West Virginia* by illustrator and cartographer Thomas "Tom" Culverwell.

9. Cartographic Contributions made by the Forest Service in World War II, 1942-1945.

With the Japanese attack on Pearl Harbor, Hawaii, on December 7, 1941, all duties and responsibilities assigned to the Forest Service for managing the national forests were transformed into essential parts of the nation's overall war and defense efforts. Fire-prevention activities protected vital wood resources needed for wartime and served an important role in civil defense. The forest-fire lookout network became a major feature of the Army's air-raid detection system. Research activities turned to efficient ways to box and crate supplies and equipment destined for the armed forces and our allies overseas, while alternative sources of rubber (the guayule plant) were explored on California's Cleveland National Forest.[57] Human resources of the Forest Service were also mobilized for the war. The Chief of the Forest Service, Lyle F. Watts stated in his annual report for 1945 that, during the war period, 1,825 men and women in the Forest Service left their regular jobs to serve in the military forces, at a significant sacrifice to the agency.[58] About 500,000 acres of national forest land in nine states and territories had been transferred to the War and Navy Departments or made available through cooperative agreements for military reservations, artillery ranges, maneuver areas, or proving grounds. Forest Service engineering staff and facilities were enlisted almost immediately for war work. As Acting Chief, Earle H. Clapp wrote in 1942, "The engineering facilities of the Forest Service were called upon by the Army Corps of Engineers for aerial photography, photogrammetry, and topographic-mapping work covering more than 4,000 square miles in California."[59] The next year, Chief Watts reported:

> "Practically all regular surveying and mapping were suspended to expedite delivery to the War Department of large-scale, precise, topographic maps of two tracts in California, aggregating 4,345 square miles. Additional work of this kind in the East is now being undertaken for the War Department. A large amount of aeronautical-approach mapping and of photograph and map-enlargement work has been done for the Air Service.
>
> "Accumulated demands for aerial photography and accurate maps needed for the protection, development, and administration of the national forests, and the extraordinary maintenance and betterment that will be required to bring forest roads and trails up to a satisfactory standard, will call for resumption of regular work on a much larger scale as soon as the situation permits."[60]

The Engineering Department of the Forest Service continued to concentrate on work assignments related to the war in 1944 and throughout 1945. Engineering work done in the past by the Forest Service documenting the construction of bridges, fire towers, signs, water development, and other Forest Service structures for the national forests was put into technical handbooks for the use of the armed forces. War work also occupied most of the time of Forest Service cartographers, as in 1944:

> "The war-mapping project was terminated upon completion of precision topographic maps from aerial photographs for 2,750 square miles in Pennsylvania,

---

[57] James B. Yule, an engineer and cartographer from the Northern Region was detailed to California during World War II as a map maker for the U.S. Amy and was later charged with finding suitable factory space to process guayule, a milkweed plant from Mexico, into rubber.

[58] Lyle F. Watts, *Forests and Employment, Report of the Chief of the Forest Service,* (Washington: Government Printing Office, 1946), p. 34.

[59] Earle H. Clapp, *Forestry in Wartime, Report of the Chief of the Forest Service,* (Washington: Government Prating Office, 1942), p. 14.

[60] Lyle F. Watts, *Forests in War and Peace, Report of the Chief of the Forest Service,* (Washington: Government Printing Office, 1943), p. 21. Because of the need to map these parts of the California coast, the War Mapping Project was headquartered in San Francisco.

Maryland, and Virginia. This job required more than 100 skilled surveyors and mappers. Twenty-one stereoscopic plotting machines, invented in the Forest Service, were used in turning out more than 100 quadrangles. Other confidential work on theater-of-war maps has been completed and additional work is being undertaken.

Specialists of the Forest Service photographic laboratory have devoted over 20,000 man-hours to aeronautical approach charts, foreign and domestic war mapping, and photostat and enlargement work for the Office of Scientific Research and Development."[61]

And in 1945:

"Last year, the War Department terminated the topographic mapping on which the Forest Service had been engaged. However, the Navy Department requested similar assistance and, when the war with Japan was speeded up, a large increase in personnel was required.

The job involved making maps of war areas with as much accuracy as possible from whatever information was available. Sometimes, there were no maps at all; in other instances recent aerial photographs permitted changes on existing maps. Ordinarily, the source material would not be sufficiently accurate or adequate for good mapping. Great ingenuity was called for in finding practicable and satisfactory ways of using available data. The morale of the organization was high; each man realized the importance of the work in the Pacific War.[62]

Through these efforts Forest Service cartographers made their own unique and essential contributions to the war effort, however, they came at a cost to the agency. At the end of the war the general condition of the mapping of the national forests was dismal. Most maps were old and outdated. There existed a very large cartographic deficit with which the agency had to contend.

10. A New Generation of Mapping, 1946-1975

It took over a year before the Forest Service could complete the transition from war to peace-time conditions. Nearly one thousand Forest Service personnel who had served in the armed forces had returned for work by June 30, 1946. Only 27 former Forest Service staff did not take advantage of their reemployment rights.[63] These returning veterans were all welcomed back into the workforce, but the process of reintegrating veterans was made more difficult due to the fact that many Forest Service employees who had been transferred to various temporary wartime agencies, activities, and projects also needed to shift back to their peacetime roles within the agency. Even in the midst of the transition, the Forest Service furnished the War Department with five technical employees to assist in organizing the

---

[61] Lyle F. Watts, *Report of the Chief of the Forest Service,* (Washington: Government Printing Office, 1944), p. 17. The Office of Scientific Research and Development (OSRD) was an agency of the United States federal government created in 1941 to coordinate scientific research for military purposes during World War II and terminated in 1947. This topographic work in the east and the completion of the California work resulted in the transfer of the War Mapping Project to Gettysburg, Pennsylvania.

[62] Lyle F. Watts, *Forests and Employment, Report of the Chief of the Forest Service,* (Washington: Government Printing Office, 1946), p. 33.

[63] The issues of the *Directory, Forest Service*, for 1943, 1944, 1945, and 1946 carry an "Honor Role, Forest Service Personnel in the Armed Forces" in the back pages. The listing is arranged by Forest Service Region, beginning with the Washington Office followed by Experiment Stations and other research facilities and indicates the name, branch of service, and if the staff member had been killed in the line of duty.

forestry program for the occupation of Japan and Korea. A forester was also made available to administer civilian forestry projects in the American zone in occupied Germany.

As for the situation of the Forest Service's post-war mapping effort, Chief Watts wrote:

> "During the war the Forest Service's Engineering Division was engaged in special war-mapping projects for the Army and Navy. After VJ-day, the Navy Department requested continuation of Forest Service assistance in the preparation of maps by photogrammetric methods. Most of this work has now been completed, and the Division is shifting from war activities to preparation of maps needed for regular Forest Service work. Maps adequate in scale, accuracy, and detail are available for only about 15 percent of the national forests. Most maps in use are obsolete. Contracts were awarded in 1946 for aerial photography of approximately 34,000 square miles. New methods and equipment, such as a camera transit, photo transit, and radial-line plotter have been developed to obtain greater accuracy and increased production in mapping work. [64]

A new generation of Forest Service administrative maps arrived shortly after the war's end. The California Region issued the first such example with its 1947 administrative map for the Tahoe National Forest. By the end of the 1970s all national forests, except for those in the Intermountain and Alaska regions[65] had their own comparable versions of a highly accurate "Class A" administrative map. Most were compiled and published in the 1960s and many saw two or even three editions. The 1947 Tahoe map launched the "Forest Series" administrative map type with a scale of 1:126,720, or a new 2-inch map. As stated on the map itself, the 1947 Tahoe map was constructed in the San Francisco Regional Office "from Forest Service planimetric maps constructed by photogrammetric methods from aerial photographs," with vertical and horizontal control points established by the Forest Service, U.S. Coast and Geodetic Survey and the U.S. Geological Survey. As a transition map, the 1947 map does not appear very different from the 1:126,720-scale administrative maps that were produced by the California Region in the previous decade or from the older maps then being revised and reprinted.

All Forest Service maps were still governed by the 1936 mapping standards, which determined the format, symbols, and overall appearance of Forest Service administrative maps. The difference is found in the 1947 map's accuracy, based as it was on primary source data and not compiled from existing maps. The 1947 Tahoe map and the new administrative maps that followed were produced from Forest Service planimetric maps which were constructed directly from aerial photographs or from U.S. Geological Survey quadrangles that had been made from aerial photographs. Maps in the "Forest Series" became the Forest Service's flagship map series and after 1951 when the map classification ratings were first applied, they were given the highest map accuracy designation of "Class A." Until the advent of aerial photography, the Forest Service had used cartographic data from other agencies of the federal government with field checking by their own staff, to produce their maps. Aerial photography offered a steady source of accurate and reliable base material. With the equipment, technology, and staff on hand to translate the photography into maps, the Forest Service was for the first time able to make its own maps in greater quantity and with greater accuracy than in the past.

---

[64] Lyle F. Watts, *Timber Shortage or Timber Abundance, Report of the Chief of the Forest Service,* (Washington: Government Priming Office, 1947), p. 21. The Navy War Mapping Project was based in Gettysburg, Pennsylvania.

[65] By 1975 the Intermountain Region had issued 1:126,720-scale administrative maps for all its forests with a map accuracy of "Class C" which reflects this region's dependency on very high altitude aerial photographs flown by the U.S. Army. Alaska issued only one Class A map up to 1975. This was a 1963 Sitka Ranger District map at 1:253,440-scale.

There was, however, an immediate need for maps after the war by resource managers and foresters as well as the public, and while the advent of the new Forest Series maps was a milestone event, constructing the new generation of administrative maps was projected to take years, especially in light of small budgets for aerial photography acquisition. Chief Lyle F. Watts wrote in his 1950 report that, "Mapping funds available to the Forest Service continue to fall short of financing the standard maps needed for management of the forests. In the meantime, planning sheets prepared in developing standard maps have to suffice as forest administrative maps."[66] In other words, advance or preliminary maps were used in-house as an alternative for final accurate mapping. To make up for the lack of funding, the Forest Service cooperated as often as it could with other federal agencies in the acquisition of aerial photographs, as in 1949 when through the cooperation of the Navy, 25,000 square miles of aerial photography was obtained for national forest areas in Alaska.[67]

Even though there was an overwhelming need for maps, Forest Service cartographers were justifiably reluctant to put much effort into updating older maps whose base data was unreliable or unknown. This led regional office staff to quickly make limited revisions or simply reprint many older maps. Some administrative maps were revised and issued only in blue line editions so they could be reproduced on demand until newer maps could be printed, conserving their region's resources. The resulting mix of older map stock, slightly revised, and new mapping from aerial photographs then in use prompted the Division of Engineering to introduce a map classification system[68], whereby a map designated "Class A" was the most accurate, being compiled from recent aerial photography by photogrammetric methods, all the way down to "Class EE" for maps of unknown accuracy. In the Northern Region, the reprinting of the 1936 Cabinet National Forest topographic map in 1956 under a new title *Parts of the Kaniksu, Kootenai and Lolo National Forests (former Cabinet National Forest), Montana* is an example of such reprints out of necessity. The new title illustrates how the lands of the former Cabinet National Forest were divided among existing national forests. This reprint was given an accuracy rating of Class EE. When there was a mix of cartographic base data, an authority diagram was often added in the margin of the map to indicate the accuracy at any given point on the map. For instance, the administrative 1:126,720-scale maps of the 1953 Deerlodge and 1954 St. Joe National Forest carry such diagrams. One class of data might predominate, yet because of the mixed data, no overall map class designation could be assigned to these maps. When one such map class designation could be applied to the entire map, the maps were given that class. These began to appear on Forest Service maps beginning in 1951 and the practice endured well into the 1980s. By then, most every map produced by the Forest Service was a Class A map.

Topographic mapping prepared by the Forest Service was limited to national forest areas that were unlikely to be mapped by the United States Geological Survey in time to meet urgent forest management requirements. For instance, aerial photography was acquired for the Prescott National Forest in 1946. By using stereo-photogrammetric methods with the KEK plotter and with field checking, 15 topographic maps were prepared by the Forest Service on the scale of 1:62,500. These standard 15-minute topographic quadrangle maps were then turned over to the U.S. Geological Survey for printing in 1948. They were included into the Geological Survey's topographic mapping program, noted as being available on topographic map indexes, and distributed by Geological Survey. Some of the sheets made by the Forest Service and printed by the Geological Survey did not cover the entire 15 minute area, only the area

---

[66] Lyle F. Watts, *1950 Report of the Chief of the Forest Service: Cooperation in Forestry.* (Washington: Government Printing Office, 1950). p. 51.

[67] Lyle F. Watts, *Report of the Chief of the Forest Service, 1949: New Knowledge in Forestry.* (Washington: Government Printing Office, 1949). p. 55.

[68] An explanation of the map classification system used by the Forest Service could not be found. Assertions found here are based on the map record and annotations on maps themselves from the National Archives collection.

within the national forest boundaries. Other topographic mapping projects pursued by the Forest Service were ones based on the Public Land Survey System for the Shawnee National Forest in Illinois from 1971-1982 and a planimetric quadrangle series covering the Clark and Mark Twain National Forests in Missouri. Maps in these three series were published at a scale of 1:24,000. The Forest Service's contribution to the national post-war topographic mapping efforts has largely gone unacknowledged.

In an example of decentralization, between 1949 and 1960 the North Central Region of the Forest Service, the predecessor to the Eastern Region in the Great Lake states, compiled a set of timber survey maps covering the national forests in Michigan, Wisconsin, and Minnesota, based on aerial photographs. Sheets in the series were entitled, *[Year] Timber Survey, … National Forest…* and were "compiled at the Office of the North Central Region, Milwaukee, Wisconsin" between the years 1948 and 1959 and issued between 1949 and 1960. The color sheets, each covering one Township or 36 square miles at 1:31,680-scale show dominate vegetation/land cover types, such as scrub oak, cottonwood, non-productive swamp, etc., with notes as to tree size and density. Production of these thematic maps was a priority of the North Central Region and so much cartographic effort was placed into producing these thematic maps by the region that their production accounts for the fact that other more ordinary administrative and forest visitor maps were not issued by Region 9 during this time. Production of new editions of forest visitor maps for the region's national forests resumed in 1958 and for Class A administrative maps in 1959.

For the public, very few new maps were issued for their use until near the end of the 1950s. Production of planimetric base maps from aerial photographs that were later used to construct Class A administrative maps had a higher priority as did "Timber Survey" maps that were based on aerial photographs. Class A administrative maps well outpaced forest visitor map production. When issued, forest visitor maps were highly variable in quality and appearance. They embraced a wide array of scales, had accuracy ratings lower than "A" or no rating at all due to the mix of data used in their compilation, and were not as detailed as the administrative maps. Some were downright sketchy. There was a very real divergence between forest visitor maps and administrative maps from 1946 to the early 1970s, whereas before World War II, the Forest Service used its standard 4-mile administrative maps as the base for most every forest visitor map. The decentralized administrative model was on full display in regard to forest visitor mapping by the various regional offices of the Forest Service after the war as administrative mapping shot ahead of mapping for the public. In the late 1960s and the following decade there began a convergence of administrative maps and maps made for the forest visitor. The decade of the 1970s saw more and more forest visitor maps being issued based on the Forest Series administrative maps at 1:126,720-scale with a Class A accuracy rating. These initial maps were not the traditional folded map with an illustrated panel title and extensive text on the verso, but were folded administrative maps with abbreviated tourist information, such as a table of recreation sites. In some cases uncolored "Travel Plans" or forest visitor maps issued to serve only for a brief time were issued, frequently on a black and white base with one color. As the decade of the 1970s progressed, better more accurate and detailed forest visitor maps based on the Class A Forest Series in the traditional folded format with panel title, text, and photographs became the Forest Service standard map for the public.

During the 1960s and early 1970s, ranger district mapping became a significant part of the mapping program of the Northern, California, and Pacific Northwest Regions and to a lesser extent to the Intermountain Region. Ranger district maps were extracted from the most current Class A 1:126,720 administrative maps then available. The ranger district was made to fit a particular paper size and thus many were issued at a smaller scale than 2 miles to the inch. The California Region added text and photographs on a select number of its ranger district maps and distributed them as forest visitor maps. A few of these ranger district/forest visitor maps were issued folded such as those for the Mendocino and Six River National Forests, and others, like a few of the ranger districts of the Shasta National Forest

which received heavy recreation use, were issued flat. For the national forests of southern California, ranger district maps were revised annually as "Fire Prevention" editions showing areas closed to the public. These fire management maps were issued for the Angeles, Cleveland, and Los Padres National Forests as well as for the forests of the Pacific Northwest Region. In Region Six, ranger district maps also were published folded as forest visitor maps as in the case of the Snoqualmie National Forest. Ranger district maps of the Northern Region were primarily used as administrative maps because of the Region's adequate series of forest visitor maps. With the exception of the Angeles and the San Bernardino National Forests, the California Region stopped issuing folded forest visitor maps covering one single national forest from 1952 to 1966 which made the Region's ranger district maps the only current maps available for public use. The ranger district map proved to be a useful and versatile cartographic product serving several purposes. However, because ranger district names and boundaries were easily and often changed, tracking them over time can be difficult.

The mapping of Forest Service special areas for the outdoor recreationist took off during this period. Maps of wilderness, wild, and primitive areas were made and issued by the Forest Service often for the first time, along with maps of special areas noted for their recreation opportunities, such as Priest Lake in Idaho and the Mammoth – High Sierra region in California. Trail maps of all sorts from the Cascade Crest Trail in Oregon to small day hike trails on the Hoosier National Forest were mapped and issued, as were detailed river running maps for the Salmon and the Feather Rivers. Special area mapping continues to be a high priority for the Forest Service, especially maps covering the scores of new wilderness, recreation, and scenic areas created since 1964.

After World War II, the Forest Service found a wider variety of federal government agencies willing to print the agency's maps. The Engineer Reproduction Plant at The Army War College in Washington, DC had changed its name during the war to become the U.S. Army Map Service. The Army Map Service printed many large administrative maps for the Forest Service in the years immediately after the war. The printer of nautical and aeronautical charts also was called upon to print Forest Service maps. Many of the administrative maps for the national forests in the South were printed by the U.S. Coast and Geodetic Survey. The Intermountain Region depended heavily on the printing plant of the Defense Printing Service or DPS located in the same city as its Regional Office Ogden, Utah. The Northern Region also used the Defense Printing Service and its successor, the Air Force Printing Service or AFPS, to print some of its forest visitor maps and special mapping, but not to the extent that the Intermountain Region did. Otherwise, local printers of all sorts were contracted by the Regional Offices to print maps, such as the Rumford Press of Concord, New Hampshire or the Delzer Lithograph Company of Waukesha, Wisconsin. Many maps were printed locally but by unidentified printers. Printing notations on maps most often do not identify the actual printer, but simply state "Agriculture – Forest Service – San Francisco" or "Agriculture – Forest Service – Missoula." Large format printers such as Geological Survey and the private firms of Williams & Heintz Company of Washington, DC and A. Hoen & Company of Baltimore, Maryland, continued to print the large sheet administrative maps, but in most cases, did not identify their company on the maps sheets they printed.

In summary, this twenty year post-war period carried with it the paradox of system-wide policies and standards being handed down from the Washington Office of the Forest Service as expressed in the priority given to the standard production of Class A Forest Series administrative maps and the decentralized, regional reprinting of largely obsolete administrative maps and a wide variety of recreation maps for the forest visitor. Each region of the Forest Service followed its own path in regard to the design, scale, information content, area priorities, and format of its folded recreation maps. Despite these two contradictory themes, Forest Service mapping made great advances in accuracy due to the use of aerial photography and the public was served an ever widening assortment of maps of system lands.

Mapping responsibilities were also growing as the system expanded. The system now included 3.8 million acres of new National Grasslands added in 1960 as well as several new national forests proclaimed in the Southern Region and the Winema National Forest in Oregon, which was created in 1961 mostly from lands of the former Klamath Indian Reservation. Also the Environmental Policy Act of 1969, which mandated environmental impact statements, made large and constant demands on the cartographic staff of the Forest Service for maps in both draft and final Environmental Impact Statements detailing proposed changes and various management alternatives. Towards the end of the period, the Class A administrative map became the new "mother map" of the Forest Service from which came maps of ranger districts, wilderness areas, and, seen first in California, Northern, and somewhat later in the other regions, the Class A Forest Visitor Map. The same quality and accuracy of the Forest Service Class A administrative map had now been extended to the maps used by the public from the 1970s to the present day.

11. Into the Future

Digitization has revolutionized mapping not only for the Forest Service but also for anyone or any organization creating or using spatial information. There has been so much change in the field, from GPS, to personal computer mapping tools to Geographic Information Systems, that the technology used to make maps in 1980 would seem completely foreign to those coming into cartography today. A big part of this change has been the ever-increasing capacity of computers to hold larger amounts of data in smaller and smaller spaces. Advances in computer memory have made it possible to input, store, and work with huge amounts of data to make highly accurate, well-designed, and informative maps. Today, the Forest Service, like many other map making organizations, has a large and diverse array of cartographic capabilities in support of its management goals as well as offering to the public an ever increasing number of forest visitor maps.

In 1992, the U.S. Geological Survey officially announced the completion of its 7.5-minute 1:24,000-scale topographic map series for the lower 48 states and soon thereafter made plans to digitize over 50,000 quadrangles and make them available free to anyone who could download them from the World Wide Web. Soon, the Geological Survey and the Forest Service were producing in paper an interagency version of the 7.5-minute topographic map for national forest areas with enhanced information showing national forest boundaries, special area boundaries, campgrounds, Forest Service administrative facilities and other information supplied by the Forest Service. The resulting dual agency map carried much more information than an ordinary 7.5-minute map issued previously by the Geological Survey in a well-designed way using unobtrusive color and symbols to convey important national forest information. The topographic quadrangle maps were a huge improvement over the 7.5-minute maps produced for the national forests of the Eastern Region in the early 1980s and printed by the Government Printing Office. When digitized, the 7.5-minute topographic maps almost instantly opened the door to a wide variety of uses in Geographic Information Systems operated by other agencies and the private sector. In a fairly recent development, the Southwestern and the Pacific Southwest Regions have started to produce topographic map atlases for various forests in a spiral bound "book" by reducing the 1:24,000-scale 7.5-minute quadrangles to 1:63,360-scale to fit the atlas format. And as with any digitally based map, these can quickly be updated and reissued.

Much work is still done in each of the Regional Offices of the Forest Service including some landmark map sets, such as the set of five topographic maps of the Lolo National Forest based on Ranger Districts, which was "constructed in 2009 by digital means at the Regional Office in Missoula, Montana from Forest Service Primary Base Series Cartographic Features File quadrangles with field review by the

Northern Region." Map production for the Forest Service has largely been centralized at the "Geospatial Service and Technology Center" in Salt Lake City, Utah, formerly the Geometronics Services Center.

There has been much more cooperation with states and other federal agencies in the production of maps for forest visitors. The Pacific Northwest Region has for a number of years now been working with the states of Oregon and Washington and with several agencies within the federal Department of Interior in the production of the Pacific Northwest Recreation Map Series. The maps produced are not based on a particular national forest, or a particular land management district, but are issued for a unified region, such as the Oregon Coast, or the Southern Oregon Cascades. The public does not set out to visit only a national forest, but seeks to enjoy the public lands in a specific region, like Washington's Olympic Peninsula not just the Olympic National Forest. The maps in this series are built with that idea in mind with all relevant agencies contributing data to make a true interagency map. The entire state of Oregon is covered in maps from this series while Washington State has six maps covering about 60% of its land area. The maps are produced in full color, on plasticized paper, often with shaded relief and are beautiful products of the digital age.

Maps today can be more specialized than ever before. Recently, the Forest Service, cooperating with the state of California, issued a folded visitors map entitled, "Lakes Basin Sierra Buttes & Plumas-Eureka State Park, map and recreation guide" on the Plumas National Forest showing both federal and state recreation areas with topography at a large scale of 1:31,680 or a half mile to the inch. This map is particularly good at showing trails throughout the whole area not just in the lands administered by the Forest Service. Forest Service trails connect with those in the Plumas-Eureka State Park. The Alaska Region has also moved away from the traditional style of map production of issuing one map for one national forest. Region 10 has created a new series of maps called "Specialty Maps" which focus on smaller areas such as the Juneau Area, or on a particular island like Wrangell or Chichagof, or an administrative area such as the Admiralty Island National Monument. These maps carry a much larger scale than would be otherwise possible and are displayed on a topographic base. The 21st century has been marked by ever more cooperation, ever more variety, ever more detail, and ever more products.

The Forest Service continues to keep up with the changing technology. Newer maps have been issued with a QR (Quick Response) code, so a smart phone's QR reader app can scan the code and download more information about the forest or special area. Recently, the Forest Service announced that the public can now access a variety of visitor maps using their Android and iOS devices via a mobile application. "This mobile app makes it easier than ever to plan your visit to a national forest or grassland," said U.S. Forest Service Chief Tom Tidwell. "By putting important forest information right at your fingertips, it will encourage more Americans to get outside and explore their forests."[69] The PDF Mobile App, developed by Avenza Systems Inc., is available as a free download from iTunes and the Android Play Store. The app provides access to Forest Service maps, such as motor-vehicle-use maps, which are free while pages from national forest atlases are available for a minor charge. This development offers users the advantage to instantly download recreation site information when needed.

Part II. Map Distribution and Map Collections

It is important to identify the policies of the Forest Service regarding the distribution of its maps to the public because these policies determined which Forest Service maps can now be found by researchers in libraries and repositories today. Laws governing the distribution of documents and maps by the

[69] U.S. Forest Service, *News Release, November 20, 2013.* http://www.fs.fed.us/news/2013/releases/11/e-maps.shtml

Government Printing Office also played a central role in determining the size and scope of map collections built by depository and other libraries over time throughout the nation.

1. The Perspective of the Forest Service

Being primarily a land management agency, there has been and continues to be a constant demand for cartographic products and services from both inside and outside the Forest Service. Internal cartographic needs have included maps and surveys for land acquisition, timber sales, land exchanges, homestead entries, roads and other improvements, boundaries, general administration and recreation. With its public face, however, the Forest Service has been somewhat ambivalent as to its identity and role as a federal mapmaker. In the 1913 edition of the *Use Book,* in its section on maps, it reads:

> "Special maps are issued for the use of Forest Service officers, or as special publications for the dissemination of information which can be best expressed graphically. Such maps are not for general distribution, though some are sold, and they may even be given away under certain circumstances. A general map of a National Forest may be given to a user when it is necessary or convenient to show thereon the lands covered by a transaction."[70]

This paragraph goes on to say that general maps of the United States as a whole showing the national forests are available to the public as are maps of North America showing natural forest areas and regional maps are available either from the Superintendent of Documents (Government Printing Office) or can be viewed at "first-class" libraries. By 1913 only a very few maps had been made by the Forest Service expressly for the public and these presumably are the maps noted as being available for sale by the Government Printing Office. Administrative maps of national forests were not generally available outside the agency, unless needed by bidders on timber sales, contractors for road or building construction, or for other transactions, such as a land exchanges.

Despite the steady improvement in map accuracy and the increase in the numbers of maps produced by the Forest Service from 1910 to the early 1920s, the agency sought to distinguish itself from other federal agencies that actively made and distributed maps for the nation such as the U.S. Geological Survey or the U.S. Coast and Geodetic Survey. On the Forest Service's 1924 map of the United States, entitled, "*National Forests, State Forests, National Parks, National Monuments and Indian Reservations"* and subsequent editions of this map produced up to 1951, the Forest Service included an accurate, yet guarded statement concerning its mapping program:

> "The Forest Service is not primarily a mapping Bureau. The maps are prepared for use in the administration, development, and protection of the National Forests and they are not issued for sale and distribution to the public in the sense that the maps of Bureaus whose primary function is mapping are issued. In many instances, so few copies of the maps are required that the cost of the preparation of a press edition is not justified; in other instances small press editions suffice, such maps are not available for distribution to the public, although they may be consulted in the files of the Forest Service."

The Forest Service is not primarily a mapping bureau, but it does make and issue maps for the public:

---

[70] U.S. Forest Service, *The Use Book: A Manual for Users of the National Forests, 1913,* (Washington: Government Printing Office, 1913), p. 83.

> "For certain of the Forests which have attracted a great number of tourists and campers, informational maps are printed primarily for public distribution. These maps are usually a reissue of the administrative map on the scale of one-fourth inch equals one mile [1:253,440], to which text is added giving general information including the forest regulations. To a limited extent these maps are distributed free upon request; that is, as many as five maps may be furnished free, but a charge of 15 cents each is made for all maps above that number, to cover the cost of lithography."

For national forests close to population centers, there is likely to be a map available for distribution to the public. There is evidence that the Forest Service supplied state tourist offices outside the state with maps. A 1928 *Road and Information Map for the National Forests of Oregon* seen in an academic library's collection had stamped on its front cover "Oregon Inf. & Tourist Bureau, 115 W. 9th St. - Los Angeles" This indicates that folded forest visitor maps were officially distributed farther and wider that one might have expected.

Continuing with the Forest Service's statement and in regard to the agency's most detailed administrative maps:

> "Editions are issued of an administrative map for each Forest usually on the scale of one-fourth inch equals one mile. Although these maps are prepared mainly for use of Forest Service officials, the edition is made large enough to permit furnishing a limited number of copies to persons cooperating in Forest Service work, or having legitimate interests in the Forests in cases where informational maps have not been published. To a limited extent these maps are distributed free upon request; that is, as many as five maps may be furnished free, but a charge of 15 cents each is made for all maps above that number, to cover the costs of lithography."
>
> "Civic organizations cooperating with the Forest Service may purchase maps in large quantities for free distribution. Further information upon this subject will be furnished upon request."[71]

These careful statements originated in Forest Service headquarters in Washington which was responsible for making and distributing this United States map and so must be seen once more in the context of the bureau's decentralized administrative structure and the printing laws. The local offices involved could interpret the phrase, "persons cooperating in Forest Service work" quite broadly or narrowly as they determined. In one example, the famous University of Oregon anthropology professor, Luther S. Cressman, was able to gather a large collection of Forest Service administrative maps of the national forests of Oregon and California from the 1920s and 1930s that he then used in his field work.[72] Professor Cressman was obviously seen as a cooperative person by the Forest Service. While not secret documents, as were the sheets of the *Forest Atlas*, distribution of administrative maps was well regulated. Only a token number of maps were retained by the Washington Office after printing; most were sent to the Regional Offices and to the forest supervisors and it must be assumed that most distribution decisions were more often made at the forest supervisor level.

---

[71] U.S. Forest Service *National Forests, State Forests, National Parks, National Monuments and Indian Reservations, 1924,* Washington, D.C. : Engraved and printed by the U.S. Geological Survey, 1924. Scale 1:7,000,000.

[72] The Anthropology Department at the University of Oregon transferred its departmental map collection to the University Library in 1990. The majority of the Forest Service administrative maps from this collection were autographed "Luther S. Cressman"

Professor Cressman's cooperation with the Forest Service proved to be a boon to the University of Oregon's Map Library as his maps, as well as maps gathered by the Geology Department, later were transferred to the Library. Undoubtedly this kind of transfer occurred many times throughout the country as academics, business owners, outdoor organizations, and others donated their collections of both administrative and forest visitor maps to map libraries and historical societies.

The congress first gave the Department of Agriculture the legal authority to sell maps and aerial photography produced by its various bureaus in 1938. Under the Agricultural Adjustment Act of February 16, 1938 (Public Law 75-430, 52 Stat. 31, specifically 52 Stat. 68), the Secretary of Agriculture was allowed to sell "such aerial or other photographs, mosaics, and maps as have been obtained in connection with the authorized work of the Department to farmers and government agencies at the estimated costs of furnishing such reproductions, and to persons other than farmers at such prices (not less than estimating cost of furnishing such reproductions) as the Secretary may determine, the money received from such sales to be deposited in the Treasury to the credit of the appropriation charged with the cost of making such reproductions." Sale of finished maps and base data was the funding mechanism that allowed the Forest Service to revise and produce maps for the public in an ongoing basis. In 1999 the Act was amended to include products available through the web as "geo-referenced "data.

Regional offices of the Forest Service retained copies of the maps that their Engineering departments had produced for their reference well into the 1960s. With government funding cutbacks and the early 1970s and 1980s, regional offices considered eliminating or drastically reducing their map collections.[73] Office space cost the regional offices of the Forest Service money, collected by the federal government's landlord, the General Services Administration. Reducing the amount of space rented reduced the costs. Regions 1, 2, and 4 still have collections of maps, though smaller in size, covering the national forests in their region, while other regions let their collections go to colleges, universities, or historical societies or have distributed their map files to national forest supervisor's offices and ranger districts. Upon examination of the map collection held by the Northern Region, the collection in Missoula holds the only publicly available copies of some national forest maps, such as the 1913 topographic map of the Lolo National Forest. Holdings information found at the end of each map citation will enable users of this reference to identify unique maps.

2. The Role of the Government Printing Office

The Government Printing Office in fulfilling its obligations under the authority of the Printing Act of 1895 (January 12, 1895 (28 Stat. 601) and later under Depository Library Act of 1962 (August 9, 1962, Public Law 87-579 (76 Stat. 352) operates a public oriented depository program, shipping to member libraries the output of its presses and those of its contractors. The 1895 law provided for the appointment of a Superintendent of Documents and directed the Superintendent to: "receive and care for all surplus documents in the possession of Government offices; assort and catalog them; supervise their distribution and sale; catalog and index monthly and annually all documents published; in fine to render accessible to librarians and the public generally the vast store of Government Publications."[74] Also, "A catalogue of Government Publications shall be prepared…on the first day of each month, which shall show the documents printed during the preceding month, where obtainable, the price thereof" [75] became part of the

[73] After visiting Region 1 in Missoula, the cartographic engineer told the author that in the 1980s much of the map collection in the basement of the federal building was distributed to the individual national forests and their Ranger Districts or thrown away. What was left in the basement were Folios, large scale forest maps, and a large quantity of 1:506,880-scale administrative maps.
[74] *100 GPO Years, 1861-1961: A History of United States Public Printing,* Sesquicentennial Ed., (Washington: Government Printing Office, 2010), page 75.
[75] *United States Statutes at Large,* Volume 28, page 612.

Superintendent of Documents' responsibilities. The Government Printing Office distributed to its network of depository libraries such important documents as the annual reports of the U.S. Forest Service, National Forest Reservation Commission, the U.S. Geological Survey including those volumes on the forest reserves, as well as U.S. Department of Agriculture publications on forestry and folded forest visitor maps that the Government Printing Office contracted to be printed. Exempted from this obligation to distribute to depository libraries were those publications, "…printed for the special official use of the Executive Departments…"[76] Thus, the folios of the *Forest Atlas* series and administrative maps were not distributed, because these were considered by the Forest Service to be primarily administrative in nature. The 1962 Depository Library Act also carried this exemption for administrative publications. "Government publications, except those determined by their issuing components to be required for official use only or those required for strictly administrative or operational purposes which have no public interest or educational value, and publications classified for reasons of national security, shall be made available to depository libraries…" [77]

The 1962 law extended the network of depository libraries and the reach of the program, calling for each agency of the federal government to furnish the Superintendent of Documents with a listing of its publications which the agency issued in the previous month that were obtained from sources other than the Government Printing Office. Once this listing was received, the GPO then asked the agency to furnish enough copies of the publications to distribute to depository libraries. In practice, however, many forest visitor maps and other maps made for the public and printed by local printers and which should have been distributed to depository libraries were not, in spite of the 1962 law. This is due largely because of short staffing at GPO for enforcement, the equivocal nature of the term "administrative," and the Superintendent of Documents' reliance on the public and government documents librarians to inform the GPO of the existence of publications and maps that should be part of the depository distribution system. This issue of federal government agencies printing their maps and other publications locally and not following the distribution rules of the depository laws affected not only the Forest Service but many other federal agencies as well. Many of the forest visitor maps made by the Northern Region office, but printed in Missoula or at the Defense Printing Plant in Ogden, Utah from 1951 into the 1970s, were never distributed by the Government Printing Office. Many special public recreational maps and brochures issued by the Forest Service throughout the nation were also not included in the depository library program. Thus, unless actively sought by librarians, or received as gifts and placed into library collections, libraries will often lack many Forest Service maps. Whenever a *Monthly Catalog* citation has been supplied for a given map citation in the Regional Chapters, that map was distributed by the Government Printing Office. The opposite is true if there is no *Monthly Catalog* citation. Some Forest Service maps were issued without a date, or with a date much older than when the map was distributed. Providing a *Monthly Catalog* citation can help with the dating of some maps, particularly for forest visitor maps produced by the Rocky Mountain District from 1919 to 1926, which lack accurate publication dates.

3. Forest Service Maps in Libraries

Besides the Forest Service maps that entered depository library collections through the distribution network of the Government Printing Office, how does one account for the many administrative maps and forest visitor maps not distributed by the government now found in libraries? Two methods have already been outlined, one of them being gifts from academics on the faculty of colleges and universities and to a lesser extent, donations from regional offices and headquarters of National Forests of surplus maps. Perhaps the most important part of building a library of maps is the librarian or the staff professional who

[76] *United States Statutes at Large,* Volume 28, page 610.
[77] *United States Statutes at Large,* Volume 76, page 352

recognizes their value to their educational institution. Without a resource person on the lookout for relevant maps, a map library suitable for research cannot be built.

Forest Service maps can come into libraries by soliciting gifts from the public at large. Map librarians travelling to regional and even national conferences held at libraries can often review quantities of surplus maps available for the taking or can ask their colleagues about surplus maps needing new homes. Gifts from individuals and exchanges between libraries can be a major source of historic maps. Very few Forest Service maps have appeared in map dealer catalogs and it has only been since the mid-1990s when web auction houses such as eBay have allowed the average citizen the chance to market collectables including Forest Service maps to the general public. Web auction sites have become an important place to search for Forest Service maps and for price information. The highest price realized that the author has seen for a Forest Service map occurred on a May, 2005 eBay sale of the 1915 proclamation diagram for the Sierra National Forest in California for $100.00. Undoubtedly there have been other maps sold for higher prices, but on average, Forest Service maps from the 1910s have been sold from $40 to $75; the 1920s and 1930s, in the $10 to $30 range; and more modern maps less than that, although competition among bidders can move the price of an individual map much higher. As with any vintage item considered "collectible," prices vary depending largely on condition.

Many older Forest Service maps were de-accessioned by libraries once a newer edition had been received through the depository library program. This replacement process can account for the lack of historic Forest Service maps in many collections. Discarding older maps should be made not in isolation, but in relation to other libraries in the area. Once gone from the collection it will be quite difficult to find another copy. The spread of web-based searchable library catalogs can help make determinations about the scarcity of a particular map and other libraries holding the map. Often in libraries, forest visitor maps distributed by the Government Printing Office were cataloged as books, bound between boards, and placed into the general circulating collection. Library staff should be aware of this past practice and attempt to retrieve these early Forest Service maps and store them flat in map cabinets and should these maps ever be considered for de-accessioning while cataloged as books, they should be examined by library professionals before they are allowed to leave the library.

Part III. The Cartobibliography, Citation Key, and Index to Cartographers

1. Scope and Arrangement

The cartobibliography appearing after the administrative history of each national forest in the Regional Chapters includes forest mapping published by the federal government from 1891 until about 1975. The ending date was chosen for two reasons. First, the Government Printing Office adopted the MARC (MAchine Readable Cataloging) record format, a standard descriptive cataloging format, early in 1976 and began to catalog Forest Service maps directly into the OCLC national bibliographic utility. The Library of Congress created the MARC format for books, maps, and other non-book formats. These MARC cataloging records were published directly into the Government Printing Office's *Monthly Catalog of Government Publications.* With common descriptive rules for maps, libraries too, began in earnest to contribute their own map records, both current and historical, to the national database along with the Library of Congress and the Government Printing Office. Because more is known about Forest Service maps after these developments of the mid-1970s, both those printed by the Government Printing Office and those printed locally, there is less of a need to list here what has already been gathered together in the national bibliographic database. Second, the Forest Service in and around 1975 began to bring its forest visitor's maps into conformity with its administrative maps, the majority of which were published at a scale of 1:126,720 or 2 miles to the inch with a high accuracy rating of "Class A." Slowly

over the years, maps issued for the public ceased to have that local look and feel, characteristic of the Forest Service Region in which they were produced. The only difference between the administrative map and the forest visitor map from the mid-1970s onward was that most maps made for the public included descriptive text, photographs, and was folded.

Some types of maps will not appear in the cartobibliography. Only published maps and maps that have been personally examined or found on WorldCat (OCLC's internet catalog) are to be found in the listing. The map holdings of the National Agriculture Library, Library of Congress, National Archives, as well as academic libraries have been the main source of map citations. There are several categories of maps that are not found here: manuscript maps, drawings, cadastral maps, published maps with manuscript annotations, all being unique and not commonly held, are left off as are most every Forest Service thematic maps, maps made to illustrate environmental impact statements and forest management plans, and commercial reformatting of Forest Service maps. Fire control maps issued annually for the forests of Southern California are noted when these also served as forest visitor maps. Internal engineering maps and drawings made for forest improvements such as roads, trails, telephone systems, and fire protection facilities as well as timber sale maps are not included here. As a general rule, the cartobibliography lists the maps that are available for review by the public in libraries, government agencies, and institutions.

Every effort has been made to include as many significant regionally produced special area maps, such as recreation areas, trails, driving tours, and the like, as was possible. Yet due to their numbers, singularity, and ephemeral nature, this type of map was difficult to identify and gather. Other maps for wilderness areas and national grasslands were widely distributed. These are included here in separate sections. Before World War II, when the Forest Service produced a new administrative map, the agency usually issued the map at two scales, 1:253,440-scale and 1:126,720-scale or a 4-inch map and a 2-inch map. There were occasions when the Forest Service issued a "suite" of maps, that is, a set of administrative maps at both 1:126,720 scale and at 1:253,440-scale accompanied by a Forest Visitor folded map all issued in the same year. The 1931 maps covering the Nezperce National Forest are an example of this rare coincidence. As appealing as this symmetry is, however, one cannot assume that the presence of one edition means the existence of the others. For instance, for the Absaroka National Forest administrative maps at 1:253,440-scale were issued in 1919 and 1925, yet complimentary administrative maps at 1:126,720-scale for these two years could not be located in any research institution or found cataloged in any bibliographic database. This is in contrast to the two administrative maps with these two scales issued simultaneously for the Absaroka National Forest in 1930, 1933, and 1937. 2-inch maps for 1919 and 1925 have not been seen nor have they appeared in any database so therefore, they do not appear in this map listing, although they may be discovered later.

Due to the unique mapping characteristics found in each region of the Forest Service, the cartobibliography for each Regional Chapter is arranged in a slightly different ways. This is especially true for the early maps of the Forest Reserves produced by the U.S. Geological Survey. But in general, the first maps to be listed are those showing the whole region and then by smaller areas in the region not identified with a particular national forest. Next to be listed are General Land Office state maps included in whole or in part of the particular region followed by the largest segment of the map listing, the maps of individual forest reserves and national forests. Ahead of each map listing are a few paragraphs on each forest and an administrative history in chronological order by event. The cartobibliography for each forest reserve and national forest concludes with a separate listing of special mapping: wilderness areas, national grasslands, and miscellaneous areas. Finally, indexes to the names of the cartographers that appeared on maps differentiated by federal agency and a bibliography of sources used in the compilation of this work conclude each Regional Chapter.

Internal arrangement of the cartobibliography is by date of publication. In order to preserve this chronological arrangement and, at the same time, maintain a strong link between a national forest's administrative history and its maps, under each forest the first maps to be listed are those that accompany Presidential Proclamations and Executive Orders. Most every proclamation diagram are found reproduced in the pages of the *United States Statutes at Large* and these are noted with an * in the administrative history itself. But the proclamation diagrams described in citations are those printed separately and not the smaller page-sized diagrams found in the *U.S. Statutes at Large*. Executive orders were only issued separately and quite a few do not include maps. After the proclamation and executive order maps come any General Land Office maps produced for the forest reserve, then Geological Survey mapping, *Forest Atlas* citations, and finally U.S. Forest Service mapping up to 1975.

The order of map entries within each agency category is first by date. If two or more maps have the same date, then by scale, the larger scale map listed first. If two or more maps have the same date and scale, then by map type in this order: administrative, topographic, forest visitor or recreation map. Maps of a forest's ranger districts will always follow an administrative map of the entire forest if both map types have the same date. Information enclosed with brackets is information derived from a source other than the map itself or if accompanied by a "?" it is the author's best estimate.

2. Use

Since many of these early forest reserves were later broken up into smaller national forests and renamed, it is important for a researcher to note that if they are examining the modern day Kaniksu National Forest, for instance, the first entry in the administrative history for the Kaniksu notes that the forest was established from lands of the Priest River National Forest. At that point, our user should examine the map listings for the Priest River Forest Reserve and National Forest 1897-1908 to discover additional mapping resources, such as the U.S. Geological Survey mapping for areas now embraced by the Kaniksu National Forest. Similarly, in reviewing the administrative history and mapping of early forest reserves, note the last entry in each that specifies the fate of that early national forest. Then follow up by surveying these newer national forests for maps covering the area of interest. Cross references are provided, but users should rely on the administrative histories to take them back and forth in time to other areas to gain the complete record of any given national forest or specific land area.

3. Sample Map Entry (see *Illustration 13, 14, and 15* below)

1) **Flathead National Forest, Montana, 1927.** (Forest Visitor's map)
2) U.S. Department of Agriculture, Forest Service; compiled at District Office, Missoula, 1916 from U.S.G.S., G.L.O., Forest Service and other surveys; revised 1922; traced at Washington Office by E.L. Mehurin, 1922; revised 1926. Printed by the U.S. Geological Survey.
3) 1927. Scale, ca. 1:253,440. W114°35' – W112°50'/N48°30' – N47°10'. Public land (Township & Range) grid. Black & white. 64 x 58 cm. folded to 22 x 10 cm. Relief by hachures and spot heights.
4) Shows national forest, national park, Indian Reservation, and county boundaries, towns and settlements, roads, trails, railroads, Forest Service administrative facilities and other structures, rivers, lakes, and streams. "Montana Principal Meridian."
5) Text and black & white illustrations on verso. Panel title same as inside title. Panel illustration, captioned, "Forest Service road along the South Fork. Larch, Douglas Fir, and White Pine forest" and an uncaptioned photograph credited to Asahel Curtis of twin mountain peaks. Title panel has, "U.S. Government Printing Office: 1927."
6) Reference: *Monthly Catalog* (U.S. GPO) No. 392 (August 1927), page 75.
7) Holdings: Univ. of Washington; LC; NA

8) OCLC: (in this map's case, none available)

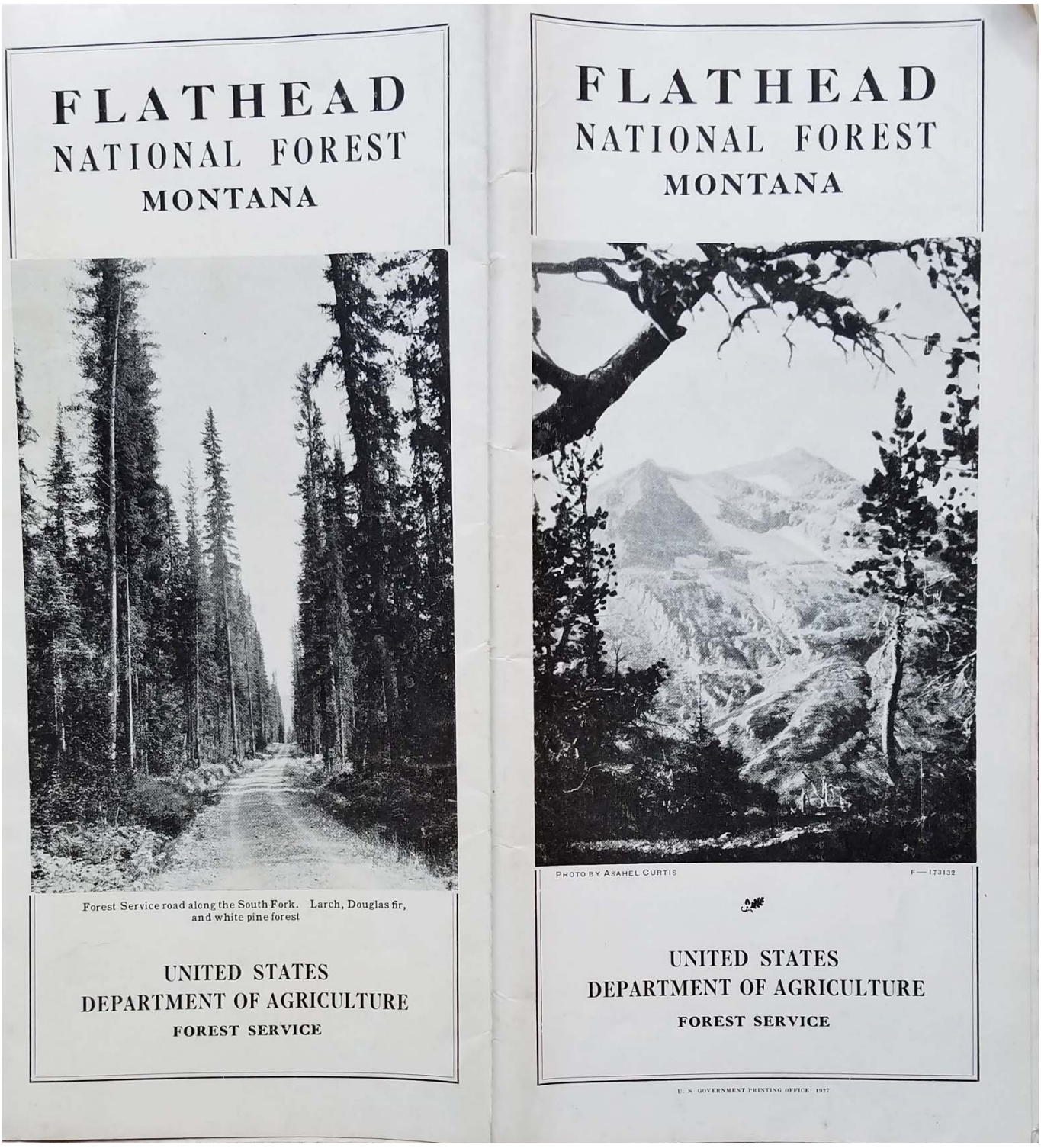

Illustration 13: Front and back illustrated panels for the 1927 forest visitors' map for the Flathead National Forest, Montana as described in the sample citation.

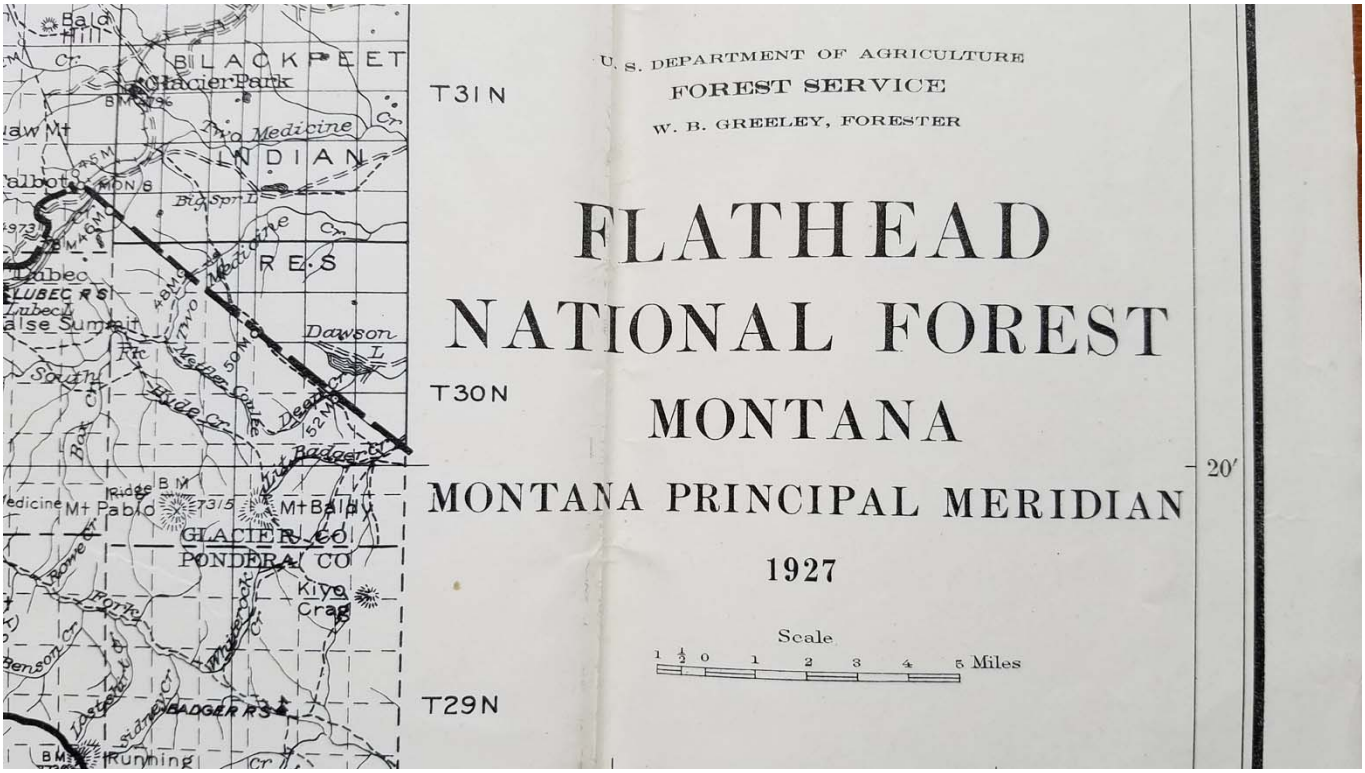

Illustration 14: Unfolded map showing title block, upper right corner, for the 1927 Flathead National Forest, Montana.

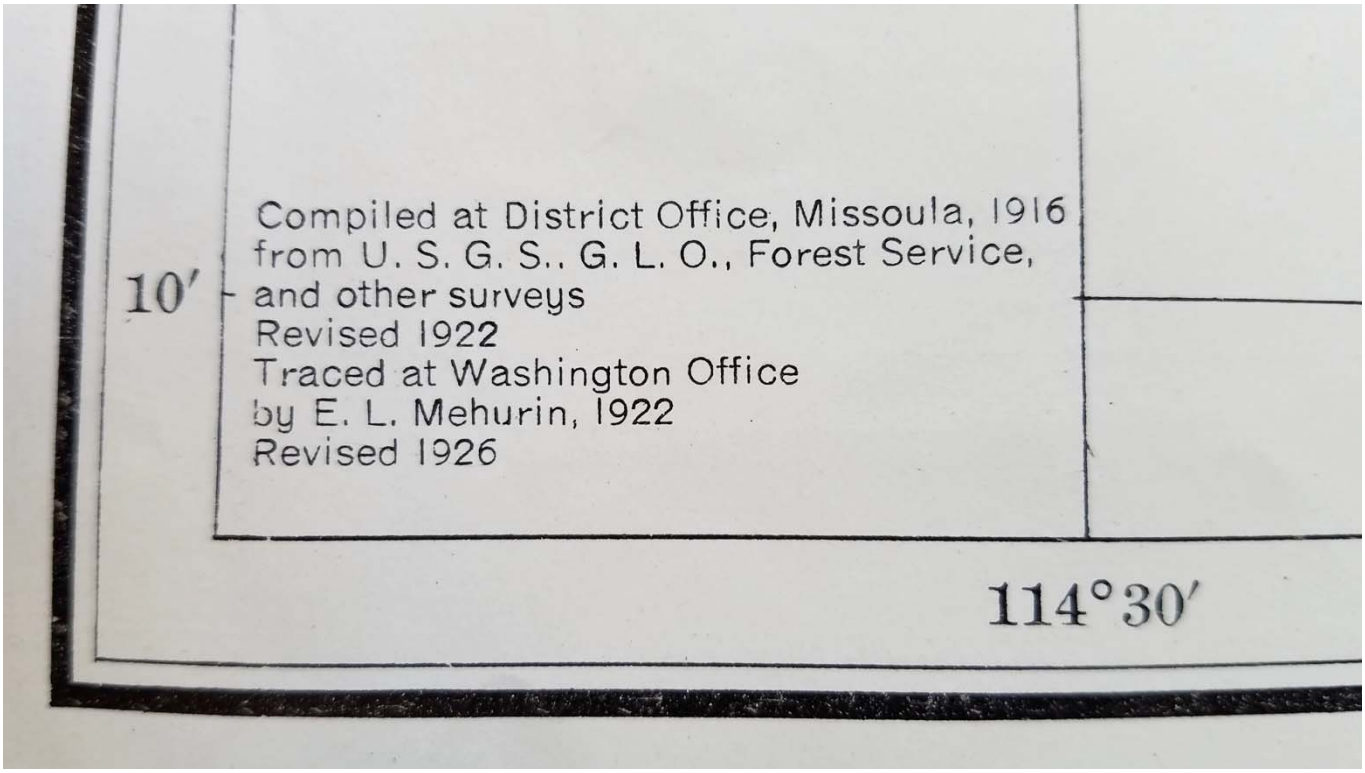

Illustration 15: Compilation statement from the lower left corner of the unfolded 1927 Flathead National Forest map. The statement, "Printed by the U.S. Geological Survey "appears in the lower right corner outside the neat line.

Explanation:

First line, title information:
Title of the map as it appears open and flat. (Type of map if not obvious from the title in parentheses)

Second line, statement of responsibility:
Agency and/or author information as it appears on the map. Revisions if any. Printing information if available on the map. Reprinting information if any.

Third line, mathematical data:
Date, [Date not verified], scale, geographic coordinates only if printed on the map, Public land grid shown or not shown, color or black & white, physical dimensions, height by width in centimeters, and if folded, dimensions folded, how relief is depicted or not (if a topographic map, the contour interval is provided).

Fourth line, descriptive information found on the main map:
Explanation of color or colors, boundaries, transportation, cultural features such as towns and structures, physical features. Also includes special attributes of the map such as map class, principal meridian, index, special areas shown, and other information.

Fifth line, descriptive information found on the verso and folded title panel of the map, if necessary:
Existence of text or photographs or other characteristics such as location maps, etc. Panel title information. Panel illustration. Other important information found on the folded title panel such as date and printing information.

Sixth line, map reference:
Whenever a specific reference is found in an index or annual report of another agency for an individual map or Forest Atlas, it is provided here as are Government Printing Office *Monthly Catalog* citations.

Seventh line, holding information:
Listing of institutions holding this map in its collections. NA= National Archives; NAL = National Agricultural Library; LC = Library of Congress, Geography and Map Division; University and public libraries are spelled out. If held by more than 10 Libraries, the map is considered commonly held, and only the holdings of the Library of Congress, National Archives, or National Agricultural Library are indicated.

Eighth line, national cataloging information:
OCLC catalog number when available. Libraries will sometimes catalog a forest visitor map as a book and not a map. Where possible, both cataloging formats (book and/or map) represented by OCLC catalog numbers are provided as well as relevant holdings information.

4. Index to Cartographers as Found on Forest Service maps

The following is a union list of the 327 names that appeared on U.S. Forest Service maps from 1907 to the 1960s. The list should not in any way be seen as an attempt to serve as a comprehensive directory of all Forest Service cartographic personnel. These are names that compiled, traced, drafted, revised, checked, and surveyed Forest Service maps and are credited for their work by name on Forest Service maps. Some regions of the Forest Service stopped adding responsible persons names to maps (apart from revisions of older maps) much earlier than other Regions. Region 6 stopped adding names in the early

1940s; the Eastern Region into the late 1960s, but generally speaking, regions halted the practice of adding cartographer's names to maps by the early 1960s.

It was customary for engineering staff, not just in the Forest Service, to identify themselves with initial letters of their first and middle names and then with their full last names. In some cases, names of cartographers were expressed entirely with initials. Even the veteran Forest Service engineer who served as Chief of the Engineering Division from 1920 to 1947, Theodore W. Norcross, expressed his name as T.W. Norcross on all Forest Service publications, directories, and maps. One will never see his first name on any of his work. Importantly, this custom not only disguised the identity of the cartographer, the custom also hid the identity of women cartographers. A more complete picture of the work of women cartographers of the Forest Service has been revealed by this examination of Forest Service mapping. Early Forest Service staff directories issued by the agency itself did not reach down to fully list the rank and file and so are of limited use in identifying its cartographers up to about 1940. After this date most all Forest Service staff came to be listed just as names began to disappear from Forest Service maps. Initials continued to be used in place of full first and middle names even in official directories.

To obtain the most complete name possible for the index of cartographers, city directories for Washington, DC and for all the cities where regional offices or forest supervisor's headquarters are located were consulted. Even so, about 20% or 64 names that appear on Forest Service maps could not be found in any directories and so could not be confirmed as Forest Service staff and initials for first, middle, and in some cases last names could not be found. It can be safely assumed that several of these 64 unknowns were women employees of the Forest Service. However of the 64 names that could not be found in directories, 35 had at least a last name, sometimes a full name. 29 remained anonymous with only their initials which means that about 9% remain completely unknown. An * by the cartographer's name indicates that this person could not be located in any directories.

A percentage of the 64 unknown map makers can be partially explained in that some of them were stationed not in the Washington Headquarters Office or in Regional Offices, but in Forest Supervisor's Headquarters or in Ranger District offices, while they worked on their national forest or ranger district maps. Most of these locations did not have city directories, like Susanville, California headquarters for the Lassen National Forest or John Day, Oregon, headquarters for the Malheur National Forest. Also, as the Forest Service cartographer Easurk Emsen Charr reminded us in his autobiography[78], many temporary workers were hired by the Works Progress Administration and other employment agencies during the Great Depression and assigned to the Forest Service. Initially, Charr was one of those WPA workers. He helped construct forest models in the San Francisco Headquarters of Region 5 that would later be exhibited at the Golden Gate International Exposition in 1939 before finding permanent work with the Department of Agriculture in Berkeley, California. Nine of the 15 draftsman who produced over 60 Oregon and Washington State recreation guides and reprints for Region 6 can only be identified by their initials. These were probably temporary workers and their presence can be sensed on maps throughout most regions of the Forest Service during the 1930s.

This examination of the names on Forest Service maps revealed 28 women or 8.56% working on cartographic projects from 1907 to the 1960s, most stationed in the Washington Headquarters Office. It was also discovered that three women were married and changed their names while working for the Forest Service: Inez V. Adams became Inez V. Corn in Ogden, Utah; Fabiola R. Gillmore married and

---

[78] Charr, Easurk Emsen. **The Golden Mountain: The Autobiography of a Korean Immigrant, 1895-1960.** 2nd ed. Urbana: University of Illinois Press, 1996. Charr was employed by the Forest Service during the 1930s in San Francisco.

changed her name to Fabiola R. Rawlins in Albuquerque, and Rosemarie Reuter met and married an engineer named Bowman and became Rosemarie Bowman in Milwaukee. The latter two women identified themselves with initials for their first and middle names: F.R. Gilmore/F.R. Rawlins and R. Reuter/R. Bowman. Several women cartographers are well known, such as the highly productive Sara L. Acker, Ellen L. Mehurin, Rose S. Shaw, and Helen B. Smith all assigned to the Washington Headquarters Office. Now many more have been identified working in the regional offices.

Some cartographers here identified have only one or two maps credited to their names. This does not mean that they were unproductive. For draftsmen and draftswomen working for the Forest Service's Engineering Departments, which is where map making is centered, there are many other tasks that need a draftsman's talents, such as architectural drawings, plans for campgrounds, road and bridge elevations to name only a few. They were sure to have been kept busy even if they only drew or revised a map or two over their careers with the Forest Service.

Included in the Regional Chapters are the names of the cartographic staff of the U.S. Geological Survey and the General Land Office who made important maps of the national forests.

Part of the cataloging process in libraries is identifying the person or persons responsible for the map's content and map catalogers will always want to have as complete a name as possible when cataloging maps. No matter which way the cartographer's name is expressed on the map, his or her name can be uniformly expressed in the catalog record for all the maps made by that person. Hopefully, map catalogers will find this union list helpful in their endeavors.

Sample Citation:

West, Vallum W. V. W. West, V. W. W. (Rocky Mountain Region, Denver, Colorado) West began as a "draftsman" for the Rocky Mountain Region in 1930 and worked through 1941. Denver directories did not carry his name from 1942 until 1945 when he again was listed as a draftsman for the Forest Service. This gap indicates service in World War II. West was listed in the directories as a draftsman for the Forest Service from 1945 until 1949, when he might have left the Denver area for the suburbs. His last map credit was for the 1963 *Trail Map of West Elk Wild Area.* West was a most productive cartographer with 23 map credits from 1931 to 1963. **Region 2**

Explanation:

Full Version of the Name as Discovered in Directories. = If only one name or only initials are listed, then the cartographer's full name could not be discovered and the name listed in bold/underline is the form of the name found on the cartographic material itself.

V.W. West, V.W.W. = Form of name found on maps themselves.

(Rocky Mountain Region Denver) = Duty Station. If more than one duty station is listed for a given cartographer, the first station provided is the first location where they served. "Washington Headquarters Office" is used to distinguish between the Eastern District/Region (Region 7) of the Forest Service also located in Washington, D.C. until 1941. When a name could not be found in a city directory where a Regional Headquarters was located, then only the Forest Service Region is identified without the city reference. If a cartographer worked in the Washington Headquarters Office and only produced a few maps for one or two regions, then those regions are referenced in bold following the citation to direct the reader to the appropriate Regional chapter.

Short narrative of cartographer's working career -- by no means comprehensive -- based on the maps made and information found in directories.

Region 2 = Regional chapter where a complete listing of the cartographer's maps can be found in a special section before the Bibliography. Of course, in the body of the regional chapter each map citation will have a full and complete statement of responsibility for the map and will include the names of the cartographers as printed on the map itself.

A

***R. A.** (Washington Headquarters Office) These initials could stand for either Richard Ackroyd or Raymond Archibald, both engineers, employed by the Department of Agriculture, and found in the 1939 edition of Polk's Washington, D.C. city directory. R.A. is credited with drawing the 1940 Salmon National Forest Executive Order map. **Region 4.**

Acker, Sara Lillian. S. L. Acker, S. L. A. (Washington Headquarters Office) Active 1912 to 1941, she made maps for all Forest Service regions except Alaska and is found in the 1910 and following editions of the Washington, D.C. city directories. Later editions of the city directories list her name as "S. Lillian Acker," but in all cases, employed as "draftsman" for the Forest Service. Her last map credit was for tracing the Sequoia National Forest of 1941.

Adams, Clarence M. (Pacific Northwest Region, Olympia, Washington) The city directory for Olympia, Washington, the Supervisor's Headquarters for the Olympic National Forest, lists Adams as being employed by the U.S. Department of Agriculture as a clerk. Adams compiled the Olympic National Forest maps of 1912. **Region 6.**

Adams, Herbert E. H.E.A. (Eastern Region, White Mountain National Forest, Ammonoosuc Ranger District, Littleton, New Hampshire) Adams is listed in the November 1936 edition of the *Directory* issued by the U.S. Forest Service as being a district ranger on the White Mountain National Forest. The Ammonoosuc Ranger District had, in 1936, just changed its name from the Twin Mountain Ranger District the same year that Adams joined the staff of the White Mountain National Forest. Adams is credited with two sectional maps in the 1936 White Mountain National Forest map portfolio covering the Pinkham Notch area from North Conway along state route 16 to Gorham. **Region 9**

Adams, Inez V. (Intermountain Region, Ogden, Utah) Adams joined the staff of the Intermountain District in 1919 as a clerk after having previously served as the Weber County (Utah) Assessor (1908/09), as the Weber County Treasurer (1910/11), and as the Assistant Librarian at the local Carnegie Library. In 1923 she met and married Thompson Corn, a railroad ticket agent in Ogden. She continued her career with the Forest Service under the name of Mrs. Inez A. Corn. She compiled a pair of maps in 1923 of the Lemhi National Forest. **Region 4**

Allen, Gerrard W. G. W. Allen, G. W. A. (Southern Region, Atlanta, Georgia) Allen's name can first be found in the Atlanta city directory for 1936 and the November 1936 Forest Service *Directory*, which both list his occupation as a draftsman. He continued to work for the Forest Service until to 1942 as a Draftsman, when he joined the U.S. Marine Corps at the start of World War II. The Atlanta city directory of 1947 includes his name as being a civil engineer for the Department of the Navy. His name is found on 17 maps issued between 1936 and 1960. **Region 8**

***Allison, J. H.** (Southwestern Region) Allison could have been based in Snowflake, Arizona, the forest supervisor's headquarters for the Sitgreaves National Forest but there are no city directories of small towns published for this time period that would allow confirmation. The name was not found in Albuquerque city directories of the era. He is credited with being the compiler on the 1912 topographic map of the Sitgreaves National Forest. **Region 3**

***Amidon, R. E.** (Pacific Southwest Region) This name could not be found in San Francisco city or U.S. Forest Service directories, but he is credited with the topography for the 1941 topographic map of the Stanislaus National Forest. **Region 5**

Anderson, Arval L. A. L. Anderson. (Intermountain Region, Ogden, Utah) Anderson had a remarkable career with the Forest Service. He is first mentioned in the Ogden city directory as a "surveyor" for the U.S. Forest Service in 1928 moving on to the job of Assistant Road Surveyor for the Intermountain Region in 1932. In 1935 he had moved to the Washington Office of the Forest Service serving as the Assistant Associate Engineer to Chief T.W. Norcross in charge of structures. By 1938 Anderson had moved back to Ogden into the office of Assistant Regional Forester as Chief of Region Four's Engineering Division. During the war, Anderson served in the U.S. Army as supervisor of the Utah Quartermaster Depot in Ogden before resuming his career with the Forest Service as Assistant Regional Forester. He remained on the as Chief of the Engineering

Division until 1960. His name appears on four maps as a compiler or reviser between 1927 and 1929 which were reprinted in the 1930s. **Region 4**

Anderson, Burton D. B. D. Anderson, B.D.A. (Southwestern Region, Albuquerque, New Mexico) Anderson is first listed in the 1930 edition of the city directory of Albuquerque with the occupation as "Draftsman, U.S. Forest Service." For three years thereafter, the directory states that he worked for the Forest Service as a "Blueprinter," then back as a draftsman in 1935 and onward. Anderson's absence from the Albuquerque city directories during the war years indicates military service. His name returned to the directory identifying him as working for the U.S. Forest Service after the war until 1956. He is credited with seven maps in his region. **Region 3**

Anderton, William C. W. C. Anderton. (Intermountain Region, Ogden, Utah) 1961 was the last year cartographers were given credit on the map for their work on the Intermountain Region and Anderton along with Paul S. Bieler, were the last cartographers to be so recognized. Anderton is first mentioned in the 1958 edition of Polk's Ogden city directory as a "draftsman" for the Mountain Fuel Supply Company and was a production engineer for Hill Air Force Base in 1959, before starting his career with the Forest Service. He is credited with revising the 1961 recreation map of the Bridger National Forest. **Region 4**

[Andrews, W. F.] Andrews. (Pacific Southwest Region) The topographic maps dated 1932 and 1934 of the Klamath National Forest carry references in their statement of responsibility to "Eldridge, Galeneau, Andrews, 1908" crediting them with compiling the map's topography along with several other Forest Service surveyors. The map's "Authority Diagram" indicates that the three were responsible for the topography of the Hoopa Indian Reservation. While it has not been seen, a reference has been found to a 1908 publication, bound together with other "pamphlets on forestry," entitled, *Estimate for Hoopa Valley Indian Reservation in cooperation with the Indian Service*, by I.F. Eldredge, D.C.A. Garlarneau, W.F. Andrews, and N.B. Eckbo. This publication must have included a topographic map used by Forest Service cartographers in the compilation of their maps of the Klamath National Forest. However, the Forest Service maps misspell Eldredge's and Garlarneau's names and leave out Eckbo's name entirely. **Region 5**

B

***G. I. B.** (C.C.C. enrollee) (Eastern Region, Huron National Forest) These initials appear as the person who drew the 1936 map of the Huron National Forest. **Region 9**

Baker, Ralph J. R. J. B. (Pacific Northwest Region, Portland, Oregon) Baker served as a draftsman for the Forest Service from 1935 to 1939 when he transferred to the Portland based Bonneville Power Administration and later, during the war years, to the U.S. Army Corps of Engineers in Portland, Oregon. Baker worked on several recreation map guides between 1935 and 1939 as well as the 1938 maps of the Cascade Crest Trail in Washington State. **Region 6**

Ball, Donald R. D. R. Ball. (Eastern Region, Nicolet National Forest, Moquah Ranger District, Washburn, Wisconsin) Donald R. Ball served from 1929 to 1933 as the ranger in charge of the Moquah Purchase Unit headquartered in Washburn, Wisconsin. When the Nicolet National Forest was proclaimed on March 2, 1933, the Moquah Purchase Unit became the Moquah Ranger District of the Nicolet National Forest and Ball served as its first District Ranger. On November 13, 1933, the Moquah Ranger District was transferred to the newly established Chequemegon National Forest, whereupon, Ball's name no longer appears in Forest Service directories. Ball later served as the Forest Supervisor of Nicolet National Forest in Rhinelander, Wisconsin in the late 1940s and in the 1950s as Chief of the Division of Operations (Assistant Regional Forester) for the California Region. His name is found on the 1931 map of the Moqua Purchase Unit and the 1933 map of the Moquah Division of the Nicolet National Forest. **Region 9**

Banks, Kenneth E. K. E. Banks. K.E.B. (Pacific Northwest Region, Portland, Oregon) According to the Portland city directory, Banks began his career with the Forest Service in 1928 as a "clerk" and the next year as a "draftsman." Directories from 1929 to 1941 list his name as serving in this capacity with the Forest Service. He is credited with compiling, revising and correcting national forest maps (1929-1931) as well as recreation maps of the 1931 Oregon Skyline Trail and the Naches Highway in Washington State. **Region 6**

Bartruff, Chester B. C.E.B. (Pacific Northwest Region, Portland, Oregon) In 1935 when Bartruff was revising the Chelan National Forest map, he was listed in the Portland city directory as a "clerk" working for the Forest Service. The next year the directory had his name followed by his occupation, "draftsman." 1937 found this draftsman employed by the U.S. Army Corps of Engineers in Portland, Oregon. **Region 6**

Bassett, Charles C. C. C. Bassett. (Washington Headquarters Office) Washington, D.C. city directories from 1910 to 1915 indicate that Bassett worked for the Department of Agriculture as a "draftsman" as well as a "soil cartographer." Bassett worked on four folios for as many regions in the years 1907-1908.

***Bates, Frank D.** (Northern Region; Rocky Mountain Region) Bates could not be found in Forest Service directories or in city directories of the early1950s for either Missoula, Montana or Denver, Colorado. He might have been a contractor, like his fellow compilers, Robert F. Jamieson and Farrell W. Woodward given the task of compiling a map of the Beartooth Primitive Area in 1954. **Region 1 & 2**

Bell, Arthur I. A. I. Bell. (Pacific Southwest Region, San Francisco, California) Bell was first listed in the San Francisco city directory as a "draftsman" with the U.S. Forest Service in 1914, but it wasn't until 1924 that he received his first map credit for this work on the map on the Calaveras Big Tree Groves. He worked for the Forest Service well into the 1950s making him one of the longest serving and productive cartographers in the California Region with nearly 50 map credits. **Region 5**

Beuttel, Ray H. R. H. Beuttel. (Northern Region, Missoula, Montana) Beuttel was an active cartographer from 1935 to 1948 primarily with topographic work. He is found in both Forest Service staff directories and the Missoula city directories as employed as a draftsman by the Forest Service. **Region 1**

Bieler, Paul S. P. S. Bieler, Bieler, P. S. B., P. B. (Intermountain Region, Ogden, Utah) Bieler had begun his professional career as a draftsman for the Southern Pacific Railroad in Ogden in 1924. The difficult economic times might have led his being either terminated or transferred by the railroad, because the 1933 edition of the city directory does not list his name. By 1934 he has returned to the pages of the Ogden city directory as working as a "draftsman" for the U.S. Bureau of Reclamation. According to the 1938 Ogden city directory, Bieler had become a Forest Service draftsman in the Intermountain Region's Engineering Division. Bieler remained on Region 4's staff well into the 1960s and was one of the last cartographers, along with newcomer William C. Anderton, to have his work recognized in map credits, in this case for the 1961 Bridger National Forest recreation map. **Region 4**

Bird, Merrill W. M. W. Bird, M.W.B. Intermountain Region, Ogden, Utah) Bird joined the Intermountain District in 1929 as a "draftsman" and had a long career with the Forest Service alternately being listed as draftsman, Chief draftsman, Cartographic engineer, or simply, cartographer in the Ogden city directories. With over 25 map credits, Bird continued as a Region 4 cartographer well into the 1960s. **Region 4**

Blakelock, David H. D. H. Blakelock, D.H.B. (Pacific Northwest Region, Portland, Oregon) The first listing for Blakelock in the Portland city directory is found in the 1910 edition which lists him as being a "draftsman" for the U.S. Reclamation Service, a position he kept until at least 1915. For the following two years, the Portland city directory includes Blakelock indicating that he is a draftsman by profession, but does not list his employer. 1918 is the first and last time that he is listed as being a draftsman for the U.S. Forest Service. After an absence from the Portland directory for five years, he reappears in 1925 as a draftsman without an employer listed, then during 1927 for Portland's Bureau of Public Works, ultimately in private practice. Of his five maps, one was dated 1917 and the others dated 1918. The maps were reprinted several times each time with Blakelock's name. **Region 6**

Bleckley, Kenneth L. K. L. Bleckley, K. B. (Southern Region, Atlanta, Georgia) Bleckley was first listed in the 1937 Atlanta city directory as being an "engineering draftsman" with the Forest Service up to 1940. Not listed in the Atlanta city directories from 1941 forward. His two map credits are dated 1937 and 1939. **Region 8**

Bonner, Frank Edward. F. E. Bonner. (Northern Region, Missoula, Montana) A student at the University of Montana in 1909 and a draftsman for the Forest Service beginning in 1910, Bonner became, by 1915, the Chief of Geography for District 1. He was active from 1911 to 1919 with folio and topographic map work. Bonner later transferred to San Francisco to become the District Engineer for the California District until the summer of 1929. Both the October 1929 Forest Service *Directory* and the 1930 San Francisco city directory no longer recorded his name. **Region 1**

Borgfeldt, Robert E. Lee. R. E. L. Borgfeldt. (Pacific Southwest Region, San Francisco, California) Borgfeldt's was largely uncredited for this map work. He was first listed in the San Francisco city directory in 1909 as being a "draftsman" for the U.S. Forest Service. However, his first map credit came in 1927, the others between 1930 and 1932. Subsequent city directories have him working for the Forest Service through the war years. **Region 5**

Bowman, Rosemarie. R. Bowman. (Eastern Region, Milwaukee, Wisconsin) Between the publication of the 1953/54 edition and the 1955 edition of *Wright's Milwaukee (Wisconsin) City Directory,* the former Ms. Rosemarie Reuter, a draftsman with the U.S. Forest Service married Mr. William T. Bowman, an engineer. The 1955 edition of the Milwaukee city directory calls attention to this change by adding "Mrs." to Bowman's name. By 1957 her name was no longer recorded in the Milwaukee city directory. She drafted the 1955 map of the Medford Ranger District of the Chequamegon National Forest. **Region 9**

Bradford, Frederick D. F. D. Bradford, F. D. B. (Washington Headquarters Office) Bradford was active from 1912 to 1919, primarily with proclamation diagrams for all Districts except the Eastern District. His name is found in the 1910 Washington, D.C. city directory as being employed by the Forest Service.

Bradley, William Cecil. Wm. C. Bradley, W. C. Bradley. (Southern Region, Atlanta, Georgia) Bradley was listed as being a draftsman with the Forest Service in the 1940 – 1942 editions of the Atlanta city directory with map credits from 1938 to 1941. **Region 8**

Brechbill, R. Etta. R. Etta Brechbill. (Northern Region, Missoula, Montana) Brechbill was one of the most active cartographers that the Northern Region had based simply on the number of times her name is credited on the maps produced. Listed at a "student" in 1915/16 edition of the Missoula city directory and, more specifically, as a student at the University of Montana in the 1917/18 edition of the directory, the first mention of Brechbill working for the Forest Service as a draftsman came in the 1922/23 city directory. According to the map record she worked on tracing and compiling maps from 1922 to 1941, however, the last entry for Brechbill can be found in the 1943 Missoula city directory, "Died, Feb. 15, 1941, Age 44." None of the sources consulted have provided her full first name, only the initial "R." **Region 1**

Bright, George A. Geo. A. Bright. (Pacific Northwest Region, Portland, Oregon) Early in his Forest Service career, Bright most likely worked out of Pendleton, Oregon, the Forest Supervisor's headquarters for the Umatilla National Forest when he compiled the 1913 map of the Umatilla National Forest. The 1918 Portland city directory carries Bright's name and lists his occupation as an "Examiner" with the U.S. Forest Service. **Region 6**

Brind, Frederick & Brind, Ivor J. R. J. Brind. (Intermountain Region, Ogden, Utah) In 1919, two men by the name of Brind joined the Intermountain District as draftsmen, Frederick and Ivor J. Brind. By 1921, only Frederick was listed in the Ogden city directory and the next year both Brinds were gone. There is only one map credit for Brind, and that is recorded on the 1921 Challis National Forest map as "R. J. Brind." One could speculate that this could be a typographical error in that the name should have been recorded as "I. J. Brind," but this cannot be confirmed. **Region 4**

Brinton, Mary C. M. C. Brinton. (Pacific Southwest Region, San Francisco, California) Brinton comes to the Forest Service in 1959 as a draftsman according to the map record and the city directories for San Francisco. She has two map credits the 1959 map of the Plumas National Forest and the 1960 Lassen National Forest. **Region 5**

***Buckingham, E. M.** (Pacific Southwest Region) This name could not be found in the San Francisco city or U.S. Forest Service directories. Buckingham's one map credit was for the topography on the 1938 Lassen National Forest reprinted in 1947. Perhaps like R.H. Moore and C. Seid, E. M. Buckingham was stationed in Susanville, the Supervisor's Headquarters of the Lassen National Forest. **Region 5**

Buckman, Louis H. L. H. Buckman, L. H. B. (Washington Headquarters Office) The first time Buckman's name can be found in the Washington, D.C. city directory was in 1914 when he was listed as being a "clerk" with the Forest Service. By 1917 clerk had been replaced with "draftsman" as his occupation. Between 1919 and 1922 Buckman was employed once again as a "clerk" but this time working for the Census Office with the federal Department of Commerce. Between 1923 and 1926 he disappeared from the pages of the Washington, D.C. city directory only to reappear in 1927 again as a "draftsman" with the Department of Agriculture. He continued in this capacity well into the 1940s as the map record shows with map credits for the forests of **Regions 4, 6, 8, & 9**.

Burgess Jasper W. J. W. Burgess. (Northern Region, Missoula, Montana) Burgess was primarily involved in compiling and tracing 2-inch (1:126,720-scale) administrative maps from 1952 to 1958. The 1958 map of the Colville National Forest which he compiled and traced was made at the time that the Colville was part of the Northern Region (1943-1974). According to the 1952 edition of Polk's Missoula city directory, he was employed as a draftsman by the Forest Service. Later city directories record his position with the Northern Region as an "engineer," or "mechanical engineer", or simply "supervisor." He retired from the Forest Service in 1974. **Region 1**

Burgess, John. (Rocky Mountain Region, Denver, Colorado) Burgess began work with the Forest Service's Denver Office as a surveyor in 1919 and ended in 1924 (four map credits) when he became a "draftsman" for Denver Water, a public utility established in 1918. The public utility was then engaged in building an aqueduct that would carry water from the western slope of the Continental Divide to Denver on the eastern slope. The centerpiece of this engineering marvel would be the Moffat Tunnel. **Region 2**

Burklund, Egron. E. Burklund. (Pacific Northwest Region, Portland, Oregon) The 1917 issue of the Portland city directory lists Burklund simply as a "draftsman." The directory for 1918 has this draftsman working for the firm of Camp & DuPuy, Inc., architects and builders. Subsequent city directories for Portland do not carry his name. He has one map credit, a 1922 map of the Siskiyou National Forest. **Region 6**

Burnett, Bruce B. (Pacific Southwest Region, San Francisco, California) Burnett was a California Region engineer most closely associated with road building and transportation planning. He is first listed in the San Francisco directory of 1924 as being with the "U.S. Forest Service, Ferry Building." He was responsible, along with several others, for the topography for the 1933 Shasta National Forest. **Region 5**

Burnett, F. Grady. F. G. Burnett, F. G. B. (Southern Region, Atlanta, Georgia) First listed in the 1937 edition of the Atlanta city directory as a draftsman without an employer, then 1938 to 1942, a draftsman with the Forest Service, and in 1943 as a Captain in the U.S. Army. Up until 1948, city directories continued to record his name as a citizen of Atlanta and a serviceman in the U.S. Army. He has two map credits from 1937 and 1938. **Region 8**

Burrus, Robert F. R. F. Burrus, R.F.B. (Rocky Mountain Region, Denver, Colorado) Burrus was first listed as a "draftsman" for the Forest Service in the 1924 Denver city directory and went on to build one of the most impressive records of mapping in the Rocky Mountain Region with map credits beginning in 1927 up to 1955. He left federal service in the mid-1950s. **Region 2**

Byers, Virgil A. V. A. Byers, V.A.B. (Pacific Northwest Region, Portland, Oregon) Byers was first listed in the 1926 edition of the Portland city directory as a "draftsman" without an employer. After working as draftsman with the Willamette Iron & Steel Company in 1927, he hired on with the Forest Service in 1928 and served well into the 1950s as a cartographer. **Region 6**

Bynes, Henry L. H. L. Bynes. (Rocky Mountain Region, Denver, Colorado) Denver city directories for the late 1920s into the early 1930s lists Bynes as a "draftsman for the Denver, Rio Grande and Western Railroad until 1933. In 1934 he went to work for the Forest Service as a draftsman and worked in that capacity until 1938 with three map credits. **Region 2**

C

Cain, Hubert C. Cain, H. C., H. C. C. (Southern Region, Atlanta, Georgia) Cain first finds a place in the 1935 edition of the Atlanta city directory and in the November 1936 Forest Service *Directory,* both sources listing his occupation as a draftsman. His name appears on five maps as a draftsman. References indicate he remained with the Forest Service until the outbreak of World War II. **Region 8**

Calvert, Wallace R. W. R. Calvert, W. Calvert. (Pacific Southwest Region, San Francisco, California and Washington Headquarters Office) The 1937 edition of the San Francisco city directory lists Calvert as being a "draftsman" for the Forest Service. An earlier San Francisco listing, 1931, has Calvert working as a lithographer. These are the only two references to Wallace R. Calvert in the San Francisco Directories. Later, Calvert's name appears only once in the Washington, D.C. city directory for the year 1940 as a draftsman with the Forest Service. The map record indicates that it was during his 1940 stay in Washington, D.C. that he compiled and traced the Pisgah National Forest map of 1940 and the 1940 map of the Tongass National Forest, both of which indicate that he was working from the Washington, D.C. office in the statement of responsibility on the maps. His name is not found in the Atlanta city directories of the time. **Region 5, 8, & 10**

Caps, Stephen R. (Washington Headquarters Office) Listed in the 1912 Washington, D.C. city directory as employed by the U.S. Geological Survey, the agency that engraved and printed the 1913 map of District 6 where Caps' name appears as the person who supplied "additions and corrections" to the map of the region. **Region 6**

Caraway, Arthur C. , Jr. A. C. Caraway, Jr. (Southern Region, Atlanta, Georgia) First listed in the Atlanta city directory as a draftsman for the Georgia Pacific Company in 1941 and the years following as a draftsman without an employer after his name. Subsequent city directories indicate that he served in the U.S. Army during World War II and by 1948, had joined the

staff of Region 8's Engineering Division as a draftsman. He is named as the person responsible for the revision of three maps all dated 1951. **Region 8**

Carrier, Ralph E. Ralph Carrier (Eastern Region, Washington, D.C.) Carrier was listed in the 1932 edition Washington, D.C. city directory as being a "transitman" with the Department of Agriculture. This was his only directory listing. However, in the Forest Service directories, his first entry was recorded in 1932 as a transitman in the Engineering Division's Acquisition Surveys Section. He moved from Region 7 headquarters in Washington to the George Washington National Forest to do survey work as an acquisition assistant in 1934. During World War II he moved to Region 7 headquarters in Philadelphia to work in maps and surveys in the Engineering Division. Carrier would become the Chief, Maps and Surveys Section, Division of Engineering for the Eastern Region, working in Upper Darby until his retirement in 1966. His name does not appear on any map produced by the Eastern Region, yet he was fundamentally important in establishing the map and survey office in the Engineering Division for Region 7 after its move out of Washington, DC in 1941. His three maps credits were all for forests of the Southern Region. **Region 8**

Carson, Walter G. W. G. Carson. (Pacific Southwest Region, San Francisco, California) Carson was listed as being a "topographer" for the Forest Service in the 1937 San Francisco city directory along with a listing in the November, 1936, U.S. Forest Service Directory as working for the Maps the Surveys Section of the Engineering Division of Region 5. The 1941 city directory gives his occupation as a "Forester" working with the U.S. Forest Service. That is the last entry. **Region 5**

Charr, Easurk Emsen. E. E. Charr. (Pacific Southwest Region, San Francisco, California) Char was a native of Korea who was first listed in the 1936 edition of the San Francisco city directory as a "Barber." Because he was a veteran of World War I and honorably discharged, he was granted United States citizenship the same year. In the 1937 edition of the city directory for San Francisco Charr's name is recorded as working as an "employee" of the U.S. Forest Service. From Charr's autobiography, we know that this was a Works Progress Administration position working as a draftsman on the Forest Modeling Project. The project made forestry models for San Francisco's Golden Gate International Exposition of 1939. The 1939 directory lists his occupation as a "draftsman." This position was with the Department of Agriculture's Soil Conservation Service, a cartographic position he kept for over ten years. The 1939 city directory was a bit behind the times as it states that Charr's position was with the Forest Service, not the Soil Conservation Service. His one map credit for the 1940 Mendocino National Forest indicates that the Soil Conservation Service sometimes was assigned Forest Service mapping work at the Agriculture Department's Berkeley offices. **Region 5**

Cheatham, Chester W. C. W. Cheatham. (Northern Region, Missoula, Montana) Early city directories of Missoula encompassed surrounding counties, cities and farms, including Ravalli County and its principal city of Hamilton, Montana. There, one can find the name of Chester W. Cheatham in 1909 working for the engineering firm of Lord & Cheatham. In 1911 Cheatham had established a new engineering firm of Cheatham and Blakeslee in Hamilton, specializing in civil, mining, and hydraulic engineering. By 1915 Cheatham had moved to Missoula continuing his career as a civil engineer. His map credits clearly show him working on Forest Service maps during this period, but the Missoula city directory never identified him as being Forest Service staff. His entry in the 1917/18 city directory provided only his name and no occupation or employer. His six map credits indicate that he was primarily occupied with topography. He had left Missoula by the time the next city directory was published in 1922. **Region 1**

Christensen, Viggo. V. Christensen. (Rocky Mountain Region, Denver, Colorado; Northern Region, Missoula, Montana; Southern Region, Atlanta, Georgia) Christensen is most associated with topographic work for Northern Region from 1926 to 1934. Christensen served as a "draftsman" with the Forest Service according to Polk's Missoula city directory. Prior to 1926, he worked as a draftsman for the Rocky Mountain District. In 1934 he moved to Atlanta, the headquarters for the newly created Southern Region and by 1936 he is listed in the Forest Service Directory as the "Chief, Drafting." However, he has no map credits to his name during his service in the Southern Region, 1934 to 1941. **Regions 1 & 2**

Claflin, Frederick F. F. Claflin, F. F. Claflin, F. F. C., F. C. (Southern Region, Atlanta, Georgia) The Forest Service *Directory* for July 1934 lists Claflin as being a draftsman under Viggo Christensen and Atlanta city directory first recorded his name the next year up until 1938. His ten map credits date from 1935 to 1938. **Region 8**

Clayton, Alfred G. A.G. Clayton. (Washakie National Forest, Sheridan Ranger District, Dubois, Wyoming) While not strictly a cartographer, Clayton drew the portrait of Chief Washakie found on the cover of the 1938 forest visitor's map of the Washakie National Forest in Wyoming. **Region 2**

Clover, Wilbur B. Wilbur B. Clover. (Northern Region, Missoula, Montana) Clover, a long-time Missoula resident, specialized in preparing the small scale forest visitor maps of the 1950s and was recorded as being an "engineer" in the 1955

edition of Polk's Missoula city directory. In 1962 Clover had left the Forest Service and had become an air traffic controller for the Federal Aviation Administration working at the Missoula airport. **Region 1**

Colton, Clara A. C. A. Colton, C. A. C. (Eastern Region, Washington, D.C.) Map credits indicate that Colton joined the Forest Service as a draftsman in 1936, but she first appeared in the Forest Service staff *Directory* in 1934 and in the 1937 edition of the Washington, D.C. city directory. She specialized in transferring land status data onto maps between 1936 and 1938 for the Cumberland, George Washington, Jefferson, Allegheny, and Green Mountain National Forests during an active acquisition program. **Regions 8 & 9**

Colyar, Raymond R. R. R. Colyar. (Rocky Mountain Region, Denver, Colorado) Early Denver city directories beginning in 1910 list Colyar as being a "show card writer" and after 1916 as a "commercial artist." One can presume that his single map credit, tracing the 1918 Sopris National Forest map was owing to staff shortages caused by the war.
Region 2

Cook, Harold J. Cook, H. J., H. J. C. (Eastern Region, Washington, D.C.) Cook came to the Forest Service's Eastern Region in 1933 as a draftsman and worked with the agency until 1938. In that year he transferred to the War Department working in the same capacity for the Navy as a draftsman. He is known for his 1936 maps of the Green Mountain National Forest and the 1936 Grand Lake Purchase Unit in Maine. **Region 9**

Cool, Frank J. F. J. Cool. (Northern Region, Missoula, Montana) A student in Missoula in 1911, Cool was first listed as a draftsman for the Forest Service in the 1915/1916 edition of the Missoula city directory. His map record indicates that Cool first worked as a technician then moved on to more sophisticated folio and topographic work in the mid-1920s. Forest Service staff directories indicate that he was put in charge of the Drafting Section of the Northern District's Engineering Division in 1923 and held that position until about 1960. **Region 1**

Corn, Inez A. I. A. Corn. (Intermountain Region, Ogden, Utah) The former Inez V. Adams who married Thompson Corn in 1923 continued her career with the Forest Service as a draftsman tracing maps for the Intermountain District begun in 1919. Polk's Ogden city directory for 1931 and 1932 lists her as the wife of Thompson Corn, but at this time not affiliated with the Forest Service, however the April 1932 edition of the *Forest Service Directory* through the Nov. 1936 edition includes her name as a staff member of Region 4 under "drafting." Ogden city directories after 1937 do not indicate that she continued as a Forest Service employee. **Region 4**

Cox, Frances C. F. C. C. (Washington Headquarters Office) Washington D.C. directories from the time when Cox was active tracing atlas folios (1915-1917), list a Frances C. Cox working for the Department of Agriculture as a "clerk" but not identified with any particular bureau. She traced the maps for the folios of the Caribou National Forest (**Region 4**) and for the Wallowa Folio (**Region 6**).

Crawford, John L. J. L. C. (Southern Region, Atlanta, Georgia) The 1937 edition of the Atlanta city directory is the first to record Crawford. In that year, it is noted that he was working for the Forest Service as a "messenger/clerk." 1938 finds him working as a draftsman for the Warren Company of Atlanta, a refrigerator manufacturer. His one map credit is for the 1937 Recreation map of the Pisgah National Forest. **Region 8**

***Crebbin, A. K.** (Pacific Southwest Region) This name could not be found in San Francisco city or U.S. Forest Service directories. He is credited for the topography on two Klamath National Forest maps: a map of the Klamath's Orleans District (1932) and a map of the entire forest (1934). **Region 5**

Cuff, Ivan A. I. A. Cuff. (Pacific Southwest Region, San Francisco, California) Cuff served as the District Ranger for the Happy Camp Ranger District on the Modoc National Forest during the 1920s, well into the 1930s. He is listed as the compiler of the map of his ranger district in 1927. **Region 5**

Culverwell, Thomas Speiden. Tom Culverwell. (Eastern Region, Washington, D.C.) Culverwell had been annually listed in the Washington, D.C. city directory from the 1920s onward as an artist, illustrator or commercial artist until joining the Forest Service in 1936 in the same capacity. He regularly supplied illustrations and comics for Washington, D.C. newspapers, particularly the *Washington Daily News*. His 1937 entry in the city directory recorded his occupation as that of a draftsman working for the Forest Service. He was responsible for several memorable pictorial maps of the National Forests of the Eastern Region and for many public service posters featuring Smoky Bear as well as illustrations for Forest Service calendars. He retired to the coast of Maine in 1956. The George Washington National Forest was part of the Eastern Region at the time Culverwell drew his pictorial maps of the area. **Region 9**

D

***C.W.D.** (Pacific Northwest Region) Of the several set of initials associated with the Recreation Guide Map Series issued by Region 6 in the 1930s, C.W.D was the most prolific. These initials could be associated with a man or a woman on work relief projects such as the WPA during the Depression and assigned to the Forest Service. **Region 6**

***Danielson, W. C.** W. C. Danielson. (Northern Region) Served as a map draftsman in the early years of District One, but could not be located in city directories of the time. Danielson is credited with tracing the 1915 folios of the Clearwater and the Selway National Forests and for the 1918 topographic map of the Selway National Forest and might have been stationed in Idaho. **Region 1**

Darcy, William M. W. M. Darcy. (Washington Headquarters Office) Darcy was described as a "draftsman" with the Department of Agriculture in the 1940 edition of Polk's Washington, D.C. city directory. His one map credit is for tracing the 1941 map of the Cache National Forest, Utah-Idaho. **Region 4**

Daves, Lee C. L. C. Daves. (Southwestern Region, Albuquerque, New Mexico) The name was misspelled as L.C. Davis, on the 1923 proclamation diagrams for the Coconino and Tonto National Forest and on the 1927 Tonto National Forest administrative map. He is credited with compiling eleven maps. Between 1916 and 1919, Daves was listed as being a "Surveyor, U.S. Forest Service" according to Hudspeth's city directory for Albuquerque, thereafter, the name vanishes from the directory. **Region 3**

Davidson, Charles A. C. A. Davidson. (Pacific Southwest Region, San Francisco, California) Davidson is listed in the San Francisco city directories of 1936 and 1937 as being a "forester" for the U.S. Forest Service. 1938 finds him working for Shell Oil Company. He is one of several credited for the topography on the 1936 Shasta National Forest map. **Region 5**

Davison, Theodore E. T. E. Davison. (Pacific Southwest Region, San Francisco, California) Davison joined the California District engineering staff in 1929 as a topographer credited on four topographic maps of national forests. He has only one more San Francisco city directory reference in 1931. **Region 5**

Dennee, Phyllis I. P.I. Dennee. (Rocky Mountain Region, Denver, Colorado with service in the Alaska Region, Juneau, Alaska) Dennee first appeared in the 1918 Denver city directory as employed by the Denver Phone Company as a "draftsman" and the very next year in the same capacity for the Forest Service. She left the Rocky Mountain District in 1922 for the newly established Alaska District (District 8) where, with another experienced cartographer from the Intermountain District, Florence I. Shafer, she set up the drafting unit in the Engineering Division in Juneau. The October 1922 *Forest Service Directory* has Dennee listed among the staff with the Alaska District under "Drafting." Unlike Shafer who stayed in Juneau well into the 1940s, she returned to Denver in 1926 to work as a draftsman with the U.S. Supervisor of Surveys (GLO), Department of the Interior up until the beginning of second World War. Her only map credit with the General Land Office is her 1926 map of the State of Utah. Her map credits for the Superior and for the Michigan National Forests occurred during the time when the Rocky Mountain District administered the national forests of the Great Lakes states. **Region 2**

Diaz, Antonio B. A. B. Diaz. (Eastern Region, Washington, D.C.) Diaz is listed in the 1939 and 1940 editions of the Washington, D.C. city directory as a draftsman working for the Department of Agriculture. Map credits are for his compilation work on the Monongahela and George Washington National Forests. **Region 8 & 9**

Doty, Wilbur I. W. I. Doty. (Eastern Region, Washington, D.C. & Philadelphia, Pennsylvania) 1926 marks the first year that Doty is listed in the Washington, D.C. city directory. That year found him working as a draftsman for the Department of the Navy. The next year, the city directory indicates he switched employers and began working for the Department of Agriculture in the same capacity. Forest Service directories first included his name in the April 1932 edition and by the 1935 edition he was in charge of drafting for the Eastern Region, a position he held well into the 1940s, but with only three map credits to his name. **Region 8 & 9**

Dunstan, William E. W. E. Dunstan. (Northern Region, Missoula, Montana) The 1936 edition of Polk's Missoula city directory was the first to include Dunstan's name. The directory noted that he worked for the Bureau of Public Roads as a draftsman. Under a 1939 reorganization law, the responsibilities and functions of the Bureau of Public Roads, an agency of the Department of Agriculture, were transferred to the Public Roads Administration under the Federal Works Agency. Dunstan continued to work for this road agency until the end of World War II. After the war, Dunstan was employed as an civil engineer by the Northern Pacific Railway and in 1951 began his career as a draftsman with the Forest Service. The 1953 map of the Colville National Forest which Dunstan traced, came a time when the Colville National Forest in northeast Washington state was administered by the Northern Region. He retired from the Forest Service in 1968. **Region 1**

Dwyer, Albertus W. A. W. Dwyer. (Northern Region, Missoula, Montana) Dwyer had only one map credit to his name, the 1922 Kootenai National Forest map. He was listed in the 1917 edition of Polk's Missoula city directory as a "civil engineer and architect." The 1922/23 edition of the city directory gives his occupation as "student." The next edition of the city directory, 1925/26, includes his name and the words, "Died, June 15, 1923, Age 34." **Region 1**

E

***R. C. E.** (Southwestern Region, Albuquerque, New Mexico) These could be the initials of a draftsman working in Albuquerque in 1949 named Richard Elliott, but it cannot be confirmed that Elliott revised the 1948 Apache National Forest map, or if he is related to Bertrand Elliott listed below. **Region 3**

[Eldredge, I. F.] Eldridge. (Pacific Southwest Region, San Francisco, California) The topographic maps of the Klamath National Forest carry references in their statement of responsibility to "Eldridge, Galeneau, Andrews, 1908" crediting them with compiling the map's topography along with several other Forest Service surveyors. The map's "Authority Diagram" indicates that the three were responsible for the topography of the Hoopa Indian Reservation. While it has not been seen, a reference has been found to a 1908 publication, bound together with other "pamphlets on forestry," entitled, *Estimate for Hoopa Valley Indian Reservation, in cooperation with the Indian Service*, by I.F. Eldredge, D.C.A. Garlarneau, W.F. Andrews, and N.B. Eckbo. This publication must have included a topographic map used by Forest Service cartographers in the compilation of their maps. However, the Forest Service maps misspelled Eldredge's and Garlarneau's names and leave out Eckbo's name entirely. Eldredge's and others 1908 topographic work was carried over the topographic maps of the Klamath National Forest of the 1930s. **Region 5**

Elliott, Bertrand. B. Elliott, B.E. (Southwestern Region, Albuquerque, New Mexico) Elliott first appeared in the Albuquerque city directory in 1923, listed as a "draftsman, S.W. District, U.S. Forest Service." His map record of 40 map credits and city directories indicate he remained an active and productive cartographer working in the Albuquerque office of the Forest Service until about 1946. His name does not appear in the city directory after 1946. **Region 3**

Elliott, Frances. F.E. (Pacific Northwest Region, Portland, Oregon) Portland city directories from the 1930s into the 1940s list Elliott first as a stenographer and later as a clerk with the Forest Service. Elliott could have been a WPA employee assigned to the Forest Service as indicated by map credits to Recreation Guide Maps. **Region 6**

Elliott, John W. J. W. Elliott, J. W. E. (Rocky Mountain Region, Denver, Colorado) Elliott began his cartographic career with the Clason Map Company in 1927, moving on the next year to the Denver photo-engraving firm of Daniel-Smith Company (printers of national forest maps of the southwestern region in 1941) where he remained until 1932. The 1933 Denver city directory simply lists his name and his occupation but not his employer, but the 1934 directory and those after indicates he was employed by the Forest Service from 1934 to 1941. **Region 2**

Ennis, Martha W. M. W. Ennis. (Eastern Region, Washington, D.C.) Washington, D.C. city directories first record Ennis as being employed as a draftsman in 1935 by the U.S. Geological Survey. Her map credit, checking the spelling on the map, N*ational Forests and Purchase Units in the Eastern Region (Region 7), 1936*, indicates she began work with the Forest Service in 1936 although the city directory of 1937 is the first to indicate she worked for the Forest Service. By 1940 she had returned to the U.S. Geological Survey as a draftsman. **Region 9**

Eunniff, Rod. (Northern Region) Eunniff was an illustrator of forest visitor maps of the late 1950s to early 1960s but was seldom given credit. But one credit can be found on the 1962 forest visitor map of the Deerlodge National Forest. His graphic of a welcoming Forest Service ranger gesturing towards a National Forest entrance sign with a backdrop of mountain scenery was often reproduced in full color or as a line graphic on the National Forest visitor's maps issued by the Northern Region between the 1960s and 1980s. His name cannot be found in city directories of the time. **Region 1**

Evans, Oscar M. O. M. Evans. (Pacific Southwest Region, San Francisco, California) Evans was first listed in the San Francisco city directory in 1918 as a "Forest Examiner" for the U.S. Forest Service and resided across the bay in Berkeley, California. Indeed, his single map credit is found on *Maps of Calaveras Big Trees, 1924,* where he is named as being the "Forest Examiner." By 1929, he is serving as the timber surveyor for the Forest Management (later Timber Management) Division of Region 5. **Region 5**

Ewen, Jean. Jean Ewen. (Northern Region, Missoula, Montana) Ewen was involved in folio work for the Blackfeet and Sioux National Forests during World War I and listed in the Missoula city directory of 1917 as a "Forest Ranger" for the

Forest Service. By 1922/23, the city directory records that he was working as an independent surveyor. Thereafter, he is no longer listed in the Missoula city directories. **Region 1**

F

***L. A. F.** (Alaska Region) One map credit for the map of the *Admiralty Island Recreation Area, 1947.* The name could not be identified from the initials. **Region 10**

Fairfax, Randolph R. R. R. Fairfax, R. R. F. (National Forests of Mississippi, Jackson, Mississippi) According to the Jackson city directory, Fairfax worked for the Forest Service as a "technician" at the time he compiled maps of the 1935 Bienville Ranger District and the 1937 Holly Springs National Forest maps. **Region 8**

Farmer, Charles F. C. F. Farmer. (Northern Region, Missoula, Montana) Farmer compiled folios and engaged in topographic work for the Northern District during the period 1910 to 1917 as well as administrative maps and proclamation diagrams after his student years at the University of Montana. Two 1918 maps of the Lincoln National Forest in New Mexico were his last map credits. City directories of Albuquerque, the headquarters of the Forest Service's District 3, for the 1917-1925 period do not list Farmer as a resident. He might have received the Lincoln National Forest map assignments while working in Missoula perhaps due to the staff shortages caused by the first World War. His name is recorded in the 1917/1918 Missoula city directory, although without occupation or employer. 1922 finds Farmer working as the manager for the American Wood Pipe Company in Missoula. Thereafter, he is no longer listed in the Missoula city directories. **Regions 1 & 3**

Fearn, Albert E. A. E. F. (Washington Headquarters Office) The 1908 & 1910 editions of Polk's Washington, D.C. directory lists Fearn as employed by the "Bur. of Print." He worked exclusively on the National Forest Atlas folios between 1907 and 1909 for all six districts of the Forest Service.

Fenton, Katherine J. K. J. F. (Washington Headquarters Office) The 1910 edition of Polk's Washington, D.C. city directory lists Fenton as being employed by the Forest Service. She is credited with tracing two folios, one for the Fremont National Forest and the Choctawhatchee National Forests both issued in 1910. **Region 6 & 8**

Ferguson, John A. J. A. Ferguson. (Southwestern Region, Albuquerque, New Mexico) Ferguson appeared in the 1942 Albuquerque city directory as a "draftsman" for the U.S. Forest Service. The name does not appear either before or after 1942. His one map credit is for the compilation work for the Kaibab National Forest map issued in 1942. **Region 3**

***Fitch, K. S.** (Pacific Southwest Region) This name could not be found in San Francisco city or U.S. Forest Service directories but is found on the 1941 Stanislaus National Forest topographic map credited with the topographic work. He might have been working out of Sonora, California, the headquarters of the Stanislaus National Forest. **Region 5**

Flach, Victor H. V. H. Flach, V. H. F. (Pacific Northwest Region, Portland, Oregon) The 1920 edition of the Portland city directory is the first to list Victor H. Flach as a draftsman with the Forest Service. His name was misspelled on the two maps dated 1922 of the Umpqua National Forest as "Flack." The Portland city directories continued the error by spelling his name "Flack" throughout the 1920s until 1929 when it was finally spelled correctly as "Flach." Forest Service directories and maps (after 1922) spelled his name correctly. By 1930 Flach was the Chief Draftsman in the Engineering Division of Region 6 and between 1931 and 1935 he was alternately a draftsman or civil engineer according the annual Portland city directory. The November, 1936 edition of the *Directory, Forest Service* lists Victor H. Flach as "Chief, Maps and Surveys" for the North Pacific Region as did his entry in the Portland city directory: "US Forest Service, Division of Surveys and Maps" well into the 1950s. During 1943 he worked in the San Francisco Office of the War Mapping Project and in 1944/45 in the Gettysburg, Pennsylvania Office of the Project. He is credited on 23 maps of Region 6 forests. **Region 6**

Flack, Frank F. Frank Flack, F. Flack, F.F. (Pacific Northwest Region, Portland, Oregon; Rocky Mountain Region, Denver, Colorado) Flack is first listed in the Portland, Oregon city directory in 1920 as a "draftsman" with the Forest Service. Flack remained with the North Pacific Region until 1937 when he transferred to the Rocky Mountain Region, working in its Engineering Division until about 1948. Portland city directories, 1931 to 1937 listed his name as being a draftsman, US Forest Service. His name is on 46 Forest Service maps; 10 for Region 6 and 36 for region 2. **Region 6 & 2**

Fleming, Charles E. C. E. Fleming. (Washington Headquarters Office) Listed in the Washington, D.C. city directory of 1914 as being on staff of the Department of Agriculture. He was responsible for the grazing classification and base map for the 1913 Minam Grazing Atlas folio.

Flynn, Theodore P. T. P. Flynn, T.P.F. (Pacific Northwest Region, Portland, Oregon) According to the map record, Flynn began his cartographic career with the Forest Service in 1918, but was not listed in the Portland city directory that year. A directory for Portland was not published in 1919, so it was not until the 1920 edition when Flynn was identified as a "draftsman" with the Forest Service. By 1923, he was listed as a "civil engineer" for the Forest Service and from 1924 to 1926 as a Forest Service "examiner." He became responsible for road design and construction in 1929 with the Forest Service 1931-1941 and identified in the Portland city directories as an "Inspector" or as an "Engineer." Directories indicate that he retired shortly after World War II. His name appeared on 11 maps issued between 1918 and 1921 and their various reprints. **Region 6**

Francom, Harold W. H. W. Francom, Francom, H. W. F. (Intermountain Region, Ogden Utah) Polk's Ogden city directory for 1934 first lists Francom as a draftsman without an employer. He is first identified as a draftsman with the Forest Service in 1938 through 1942. Afterwards, he continued to be identified as a draftsman but without an employer, perhaps operating out of his own office in Ogden. Ogden city directories from 1952 to 1960 has Francom working as a draftsman at Hill Air Force Base just south of Ogden. His 6 map credits were for maps issued between 1940 and 1942. **Region 4**

Frankland, James. J. Frankland, J. F. (Pacific Northwest Region, Portland, Oregon) Frankland's name comes up in the 1917 issue of the Portland city directory where he is named as a "Ranger" for the U.S. Forest Service, but it was not until 1924 when the directory listed him as a "draftsman" a position he kept until 1926. The next year he was elevated to the role of Examiner, then Engineer (1929) and in 1930 as Assistant District (Regional) Engineer. In the October, 1930 U.S. Forest Service Directory: "Assistant Regional Engineer" & "Maps and Surveys"; April 1932, April 1933 USFS Directories: "Regional Engineer"; Nov.1936 USFS Directory: "Assistant Regional Forester & Emergency Work, i.e. WPA – [Works Progress Administration], Resettlement, ERA – [Emergency Relief Administration], ECW – [Emergency Conservation Work]. Portland city directories list him as the "Regional Engineer" between 1933-1950. His name appears on five maps issued between 1916 and 1918 and the 1927 Fremont National Forest map, all of which were reprinted. **Region 6**

Fredricksen, Grace J. G. F. (Pacific Northwest Region, Portland, Oregon) According to the Portland city directory of 1937, Fredricksen was working as a "clerk" for the U.S. Forest Service and in 1938 as a "draftsman" where she is credited for tracing two maps. **Region 6**

Friedhoff, William H. Wm. H. Friedhoff. (Pacific Southwest Region, San Francisco, California) Friedhoff was the mineral examiner for the California District of the Forest Service and in 1926, Stuart Y. Show, the District Forester added recreation to his responsibilities, perhaps from his early involvement in the mapping in 1918 and 1920 of the Laguna Mountains Recreation Area, his only map credits. **Region 5**

G

[Garlarneau, Dennis C.A.] Galerneau. (Pacific Southwest Region, San Francisco, California) Dennis C.A. Garlarneau graduated from the Yale's School of Forestry in the Class of 1906. The topographic maps of the Klamath National Forest issued in 1932 and 1934 carry references in their statement of responsibility to "Eldridge, Galeneau, Andrews, 1908" crediting them with compiling the map's topography along with several other Forest Service surveyors. The map's "Authority Diagram" indicates that the three were responsible for the topography of the Hoopa Indian Reservation. While it has not been seen, a reference has been found to a 1908 publication, bound together with other "pamphlets on forestry," entitled, *Estimate for Hoopa Valley Indian Reservation, in cooperation with the Indian Service*, by I.F. Eldredge, D.C.A. Garlarneau, W.F. Andrews, and N.B. Eckbo. This publication must have included a topographic map used by Forest Service cartographers in the compilation of their maps. However, the Forest Service maps misspell Eldredge's and Garlarneau's names and leave out Eckbo's name entirely. **Region 5**

Gano, Warden W. W. W. G., W. G. (Pacific Northwest Region, Portland, Oregon) Gano began his career with the Forest Service in 1934 and was the resident engineer for design and construction of Timberline Lodge on Mount Hood. Portland city directories list Gano as an engineer working for the Forest Service from the 1930s well into the 1970s. His initials were associated with several numbers in the Recreation Guide Map Series between 1935 and 1939 and perhaps this civil engineer was asked to stand in as a cartographer due to staff shortages caused by the second World War. Later city directories record his name as "Ward W. Gano." He worked in the Northern Region and in the Washington Headquarters Office before returning the Pacific Northwest Region in 1961 as the Regional Engineer. He retired in 1973. **Region 6**

Gardner, Paul H. P. H. G. (Pacific Northwest Region, Portland, Oregon) Gardner is first listed as a "draftsman" with the U.S. Forest Service in the 1932 edition of the Portland city directory although the map record indicates he started a year earlier

in 1931. City directories continued to carry his name as a draftsman for the Forest Service throughout the 1930s, although his name appears only on one map, the 1931 map of the Wenatchee National Forest. **Region 6**

Gay, Mills E. M. E. Gay, M.E.G. (Eastern Region, Washington, D.C.; Southern Region, Atlanta, Georgia) The Washington, D.C. city directory first lists Gay in 1928 as being a "chainman" for the government of the District of Columbia and later, in 1931, as a "rodman" for the DC government. He began his drafting career in the Eastern Region's Washington, D.C. office in 1932 but relocated to Atlanta in 1934 the year the Southern Region was established. All of his map credits are found on maps of southern National Forests dated after 1934, although he began his cartographic career in Washington, D.C. before that year. The Atlanta city directory of 1935 first lists his name as working for the Department of Agriculture as a draftsman up to 1941. Between 1942 and 1945 Gay's name was not recorded in the Atlanta city directory, perhaps because of military service, but he returned in 1946 as an "engineering draftsman" with the Forest Service. He left Atlanta in 1953. **Region 8**

Gilmore, Fabiola R. F. R. Gilmore. (Southwestern Region, Albuquerque, New Mexico) Miss Gilmore is listed in the 1920 edition of Hudspeth's city directory of Albuquerque as working as a "draftswoman" for the U.S. Forest Service. Directories for the years 1921 through 1923 listed her simply as a "draftsman." Between 1924 and 1930 she is no longer appears in the city directory, but continued her career as a draftsman for the Southwestern Region in 1931 under her married name, Fabiola G. Rawlins. Under her maiden name of Gilmore, she is credited for tracing the 1924 Taos Division of the Carson National Forest and for the maps for the 1923 Coronado Folio – Animas Division. **Region 3**

***Goldsmith, Belknap C.** (Pacific Southwest Region) Goldsmith's name could not be found in the San Francisco city directories issued during the 1910 to 1920 period. Perhaps he was located in the Supervisor's Headquarters of the Modoc National Forest, his only map credit in 1915, in the town of Alturas, California. **Region 5**

Good, Lewis S. L. S. Good, L.S.G. (Rocky Mountain Region, Denver, Colorado; Southern Region, Atlanta, Georgia) Good is first found in the Denver city directory in 1915 and is listed as a student. The next year finds him employed as a "draftsman" for the Clason Map Company in Denver. After a short hiatus from the Denver city directory, probably due to the war, Good returned to the Denver city directory in 1919 as a "draftsman" for the U.S. Bureau of Public Roads, at that time an agency within the U.S. Department of Agriculture. By 1922 he has transferred to the Rocky Mountain District of the Forest Service as "draftsman." The last entry for Lewis S. Good in the Denver city directory came in 1935; the next year he had transferred to the Southern Region in Atlanta, but was first listed in the Atlanta city directory in 1937 up to 1942. A highly productive cartographer, his name appears on 27 maps of Region 2 national forests issued between 1923 and 1933 as well as six maps of national forests of Michigan and Minnesota when these forests were administered from Denver, and 15 maps of Southern Region National Forests. **Regions 2 & 8**

Gosorn, Charles B. C. B. Gosorn, C.B.G. (Rocky Mountain Region, Denver, Colorado) Gosorn is first found in the Denver city directory of 1909, identified as being a "Clerk, U.S. Forest Service" and in 1910, as the "Chief draftsman, U.S. Forest Service." The 1914 through 1945 Denver directories lists Gosorn as working as the manager for the Commercial Copying Company, sometimes listed as the Commercial Copying and Map Company, perhaps his own business. He is not identified in the city directories after 1913 as an employee of the Forest Service, even though eight of his nine map credits date from this time. It could be that he preferred to be identified with the business for financial reasons and not with the federal government. In the late 1940s Gosorn was employed by the U.S. Bureau of Reclamation's Denver Office. **Region 2**

Gowan, Charles W. C. W. Gowan, C.W.G. (Pacific Northwest Region, Portland, Oregon) Gowan was hired by the Forest Service as a draftsman in 1929, a position he kept up to the late 1930s when his title became "Civil Engineer." The Portland, Oregon city directories indicate that he left the city during World War II, perhaps to serve in the armed forces, before returning to his former position as an engineer with the Forest Service. He has three map credits. **Region 6**

Graff, Ulrich. U. Graff. (Pacific Southwest Region, San Francisco, California) Graff was first identified as a draftsman for the Forest Service in the 1918 San Francisco directory and again in 1919, but in no other subsequent editions, consistent with his only map credit, that of the 1919 Plumas National Forest. **Region 5**

***Green, Willis A.** (Pacific Southwest Region) This name could not be found in San Francisco city or U.S. Forest Service directories. He could have been a WPA enrollee for only a short period of time when he drafted the 1936 Tahoe National Forest, Sierra Summit Recreation Area. **Region 5**

Gregory, Dean. A. D. A. Gregory. (Northern Region, Missoula, Montana) According to the 1922/23 edition of Polk's Missoula directory, Gregory was working as a "draftsman, Forest Service." This was the first time his name was recorded in the Missoula directory. He was involved in all types of cartographic work from 1922 when he was engaged in tracing maps, then advancing in the 1930s to compiling and revising administrative and topographic maps, to 1942 when he compiled the

maps of the Kaniksu National Forest. He was one of the most productive cartographers on the Northern Region. His name is last recorded in the Missoula city directory of 1948, but without employer or occupation. **Region 1**

Griffin, Robert H. R. H. Griffin. (Pacific Southwest Region, San Francisco, California) Griffin's name can be found first in the April 1932 Forest Service staff directory as being in the Region 5 Engineering Division's Maps and Surveys Section. Only later did the San Francisco city directories of 1941 and 1942 list his name. He worked on administrative, topographic, and forest visitor maps of which seven carry his name. In 1945 he transferred to the Federal Power Commission's San Francisco office. **Region 5**

H

***G.H.** G. H. (Washington Headquarters Office) Directories for the time period were consulted but none shed light on the identity of this cartographer. The initials "G.H. appear on the 1912 proclamation diagram for the Helena National Forest and are not found on any other Forest Service map. This might lead one to believe that this "G.H." is a printing error and should have been G.T.T. for Guy T. Trembly a highly productive tracer of maps and proclamation diagrams for the forest service at this time (see below).

Hanzlik, Edward J. E. J. H. (Pacific Northwest Region, Olympic National Forest, Olympia, Washington) The city directory for Olympia, Washington, the Supervisor's Headquarters for the Olympic National Forest, lists Hanzlik as being a "Forest Examiner" for the U.S. Department of Agriculture at the time of his 1915 map of the Olympic National Forest was issued. **Region 6**

Harrison, Dabney C. D.C. Harrison. (Washington Headquarters Office) The 1910 Washington, D.C. directory lists Harrison as working for the Forest Service where he was assigned the task of compiling National Forest Atlas folios. He could have been on loan from the U.S. Geological Survey as he is credited with the land classification and topography for the Sandpoint Quadrangle issued in the U.S. Geological Survey's 21st Annual Report of 1901.

***Hayden, J. E.** (Southern Region) Hayden's name could not be found in the city directories for either Atlanta or Tallahassee (headquarters of the National Forests in Florida) for this time period. He could very well have been working at the Ocala National Forest administrative offices in Ocala, Florida when he made the 1938 map of the Ocala. **Region 8**

Hedden, Robert T. R. T. Hedden. (Southern Region, Atlanta, Georgia) First listed in the 1938 edition of the Atlanta city directory as being a cadastral engineer working for the Forest Service up to 1941. Four maps carry his name as the compiler. **Region 8**

Hedge, Herbert F. H. F. Hedge. (Rocky Mountain Region, Denver, Colorado) Hedge was a student in 1914, an apprentice with the Clason Map Company during 1915-1916, and a draftsman for the Western Union Telegraph Company in 1917. The Denver city directories for 1918 and 1919 has him employed as a "draftsman" for the Forest Service. The directories after 1919 do not list his name, corresponding to his one map credit, the 1919 Washakie National Forest. **Region 2**

Heffner, Kelly B. K. B. Heffner. (Southern Region, Atlanta, Georgia) Heffner is found in the Forest Service *Directory* of July 1934 as working as a draftsman for the Southern Region and in the Atlanta city directory of 1935 is the first time his name is listed as working for the Department of Agriculture as a draftsman. References indicate he remained with the Forest Service's Southern Region through the war years to 1951 moving from being a draftsman to a civil engineer with a specialty in structures. His only map credit is for the 1940 Holly Springs National Forest. **Region 8**

Heim, Phillip Freeman. P. Freeman Heim, P. F. Heim. (Eastern Region, Milwaukee, Wisconsin) Heim was a career Forest Service information officer listed in the Milwaukee city directories as being an illustrator (1937), then Exhibits Director (1938-1941), and, after serving in the Army during World War II, returned to work for the Forest Service as an Information Specialist for the North Central Region. Heim was also a photographer. His name appears as the artist for five recreation maps issued by the North Central Region in 1937 and 1938. **Region 9**

Hendges, Matthew. M. Hendges. (Washington Headquarters Office) Known primarily as a draftsman for the U.S. General Land Office, he drafted the 1910 map entitled *National Forests with Related Projects and Data [of the United States].*

***Hensel, R. L.** (Washington Headquarters Office) This name could not be found in Washington, D.C. or in Portland, Oregon city directories of this time period. However, Washington, D.C. directories starting with the 1919 edition and continuing into

the 1920s list a Rudolph E. Hensel as being a draftsman with the Washington Navy Yard. There is the possibility that the "L" in R.L. Hensel was in error. The 1917 Wallowa Folio was prepared entirely by Washington, D.C. cartographers. **Region 6**

Herring, Charles M. C. M. Herring. (Pacific Southwest Region, San Francisco, California) The 1923 edition of the San Francisco city directory is the first to list his name as being with the U.S. Forest Service serving as a draftsman, but from 1927 to 1934 directories list him as being a draftsman for the Standard Oil Company. His map credits (4) extend from 1924 go 1934. **Region 5**

Hilleary, Richard P. R. P. Hilleary. (Northern Region, Missoula, Montana) Listed as a "draftsman" with the Forest Service in Polk's 1925/26 Missoula city directory and in the April 1926 edition of the Forest Service Directory as a member of the Engineering Division's Roads Section. The Missoula city directory last carried his name in its 1934 edition. Between the 1925/26 and the 1934 editions of the Missoula city directory he was listed as a Forest Service employee, serving in the capacities at various times, of clerk, surveyor, and engineer. His name appears on two maps. **Region 1**

Hinsch, Herbert S., Jr. H. S. Hinsch, Jr. (Eastern Region, Milwaukee, Wisconsin) Hinsch can first be found in the 1934 edition of the *Wright's Milwaukee City Directory* as working as a "draftsman" for the U.S. Forest Service until 1939 when his job title changed to that of "civil engineer" for the Forest Service, a position he held into the 1950s. He has only one map credit for the revision of the 1935 Wappepello Purchase Unit of what would become in 1939 part of the Clark National Forest. **Region 9**

Hilton, George P. G.P. Hilton (Eastern Region (7), Washington, D.C.) Washington, D.C. city directories indicate that Hilton worked as a draftsman in Washington, D.C. well before joining the Forest Service in 1908. His many map credits include maps for the Eastern Region as well as for forests that would, in 1934, become part of the Southern Region. For three years, 1932-1934 Forest Service staff directories place him in the Eastern Region's Engineering Division in the Drafting Section. Washington, D.C. city directories carry his name from 1901 to 1935 and even though Hilton has map credits for two maps of National Forests in the Southern Region (Caribbean, 1938 and Nantahala, 1935. His name does not appear in the Atlanta city directory for this time period. **Region 8 & 9**

Hodgson, William R. W. R. Hodgson. (Eastern Region (7), Washington, D.C.) The first entry for Hodgson is found in the 1929 edition of the Washington, D.C. city directory. In that year he is listed as being a draftsman for the C & P Telephone Company, a local company based in the Columbia Heights neighborhood. After an absence from the Washington D.C. directory between 1931 and 1934, he reappears in 1935 as working for the U.S. Census Bureau as a Draftsman until 1937. In that year, he joined the staff of the Eastern Region Engineering Division of the Forest Service. In 1940 the city directory indicates he left the Forest Service to become a draftsman for the local electric utility, Potomac Electric Power Company or Pepco. His seven map credits are for the national forests of Virginia and West Virginia, 1938-1940.
Region 8

Hoffman, Don M. D. M. Hoffman. (Pacific Southwest Region, San Francisco, California) The first mention of Hoffman being in San Francisco can be found in the 1920 city directory and is described as a "surveyor." He joined the District 5 engineering staff in the Maps and Surveys section and later moved to the District's Roads section in 1924. He is one of the topographers on the Shasta (1933) and Klamath (1934) topographic maps. **Region 5**

Hoffman, Irvin N. I. N. H. (Intermountain Region, Ogden, Utah) Hoffman first joined District 4 as a "draftsman" in 1915. He is credited with drafting two maps for District 4. In the 1917 edition of Polk's Ogden city directory it is noted that Hoffman "moved to Washington, D.C." and 1918 city directory of the nation's capital lists Hoffman as being a "draftsman" but without listing an employer. **Region 4**

***Hollenbeck, E. L.** (Pacific Southwest Region) This name could not be found in San Francisco city or U.S. Forest Service directories. His name appears on the 1954 map of the La Porte Ranger District of the Plumas National Forest. It was rare to have map credits attached to ranger district maps, so perhaps Hollenbeck's duty station was the Plumas National Forest headquarters in the town of Quincy, California. **Region 5**

Hooyer, Harry P. H. P. Hooyer. (Southwestern Region, Albuquerque, New Mexico) City directories indicate that Hooyer worked for the Forest Service's Southwestern Region from1940 to 1942 as a "draftsman." He traced the 1942 map of the Kaibab National Forest. **Region 3**

Hopper, George T. G. T. Hopper. (Pacific Southwest Region, San Francisco, California) An entry for Hopper can first be found in the San Francisco city directory for 1924 as being "with the U.S. Forest Service" and again in 1925. In 1926 he is listed as being a "draftsman" for the Forest Service and the next year as a "buyer" for the Emporium department store. He is

back being a Forest Service draftsman in 1928 but by 1930 he had transferred to the National Park Service as an assistant engineer. He is one of the topographers on the Shasta (1933) and Klamath (1934) topographic maps. **Region 5**

I

Iverson, Ray C. R. C. Iverson. (Eastern Region, Nicolet National Forest, Argonne Ranger District, Eagle River, Wisconsin) Ray C. Iverson served from 1929 to 1933 as the ranger in charge of the Oneida Purchase Unit headquartered first in Three Rivers and then in Eagle River, Wisconsin. When the Nicolet National Forest was proclaimed in March of 1933 and the Oneida Purchase Unit became the Argonne Ranger District, Iverson continued as the district ranger from 1933 to 1934. The next two years saw Iverson a native Iowan, serving as the Assistant Supervisor of the Hawkeye Purchase Units stationed in Des Moines, Iowa. After his service in Iowa, he held administrative positions in the Regional Office in Milwaukee, Wisconsin and once again on the Nicolet National Forest in Rhinelander, Wisconsin. He compiled the 1933 map of the Argonne Division, Nicolet National Forest. **Region 9**

J

Jackson, Charles Donald Jr. C. D. Jackson, C. J. (Rocky Mountain, Region, Denver, Colorado; Intermountain Region, Ogden, Utah; Pacific Southwest Region, San Francisco, California) The 1920 Denver city directory is the first to list Jackson as a Forest Service "draftsman" for the Rocky Mountain District. After an absence from Denver between 1922 and 1924 during which time he worked for the Intermountain District, but his name never appeared in the Ogden city Directory. Jackson reappeared in the 1925 Denver city directory as a "draftsman" for the Clason Map Company. In 1932 Jackson is listed as an employee of the Forest Service working for the California Region in 1932. From that year until 1956, Jackson served as on the Engineering Division staff of Region 5. Most of his map credits were for maps of California's National Forests. **Region 2, 4, & 5**

***Jacquith, A. C.** (Rocky Mountain Region) Jacquith could not be found in any Denver city directories for the early to mid-1920s. His two map credits were for maps issued in 1921 and 1924. **Region 2**

***Jamieson, Robert F.** (Northern Region; Rocky Mountain Region) Robert F. Jamieson. Jamieson could not be found in Forest Service directories or in city directories for Missoula, Montana or Denver, Colorado for the early to mid-1950s period. He was perhaps a contractor who worked with Frank D. Bates and Farrell W. Woodward on the map of *The High Country Showing the Beartooth Primitive Area in the Gallatin and Custer National Forests…1954.* **Region 1 & 2**

Jeffers, Norton L. N. L. Jeffers. (Eastern Region, Washington, D.C.) Jeffers is first listed in the 1937 edition of the Washington, D.C. city directory as being a draftsman with the U.S. Department of Agriculture. In 1941 Jeffers transferred to the War Department. He worked on the 1940 map of the Jefferson National Forest and Purchase Unit.
Region 8

Jellett, William H. U. H. Jellett. (Pacific Southwest Region, San Francisco, California) The "U.H. Jellett" map credit is a typographical error. It should read "W.H. Jellett." The 1940 San Francisco city Directory clearly includes a **William** H. Jellett working as a "draftsman with the U.S. Forest Service." Subsequent city directories from 1941 and 1942 carry his name as an independent cartographer. Jellett is an uncommon name and to find it matched with "H" standing for the middle name makes it even more likely that the "U" found on the 1940 Monterey Division of the Los Padres National Forest was a mistake. It should be "W." **Region 5**

Jensen, Elof W. E. W. J. (Southwestern Region, Albuquerque, New Mexico) Jensen was listed in the 1950 Albuquerque city directory as being employed as a "draftsman" for the Forest Service, and later in 1952 and 1953, as a private surveyor and engineer. 1954 finds Jensen employed as a draftsman for the U.S. Bureau of Reclamation, Albuquerque Area Office. His two map credits are on 1949 dated maps. **Region 3**

Jensen, J. Bergithon. (War Department, Washington, D.C.) The 1903 and 1904 editions of Polk's Washington, D.C. city directory lists Jensen as being employed by the War Department as a "draftsman" and living in Fairfax, Virginia.
He drew the map of the Luquillo Forest Reserve of 1905. **Region 8**

Johnson, Clarence G. C. G. Johnson, C.G.J. (Southwestern Region, Albuquerque, New Mexico) Clarence Johnson first appeared in the Albuquerque city directory in 1921 and was listed as a "stenographer" for the federal Bureau of Public Roads, then an agency of the U.S. Department of Agriculture. After an absence from the city directories of 1922 and 1923, he reappeared as a "draftsman" for the Albuquerque architectural and engineering firm of Trost & Trost. 1925 finds Johnson as a partner in the architectural firm of Williamson and Johnson, but by next year, he is once again listed as a U.S. Department of

Agriculture employee, this time with the Forest Service and in the years following, until 1935, as a "draftsman." His 14 maps all date from 1927 to 1935. **Region 3**

Johnson, Elmer R. E. R. Johnson. (Northern Region, Missoula, Montana) Johnson brought much experience with him to the Forest Service. By the time he was first listed in the 1915/16 edition of Polk's Missoula city directory as working as a "Surveyor, Forest Service" he had already been an independent surveyor (1909) and a Deputy County Surveyor (1911). The 1917/18 edition of the Missoula city directory indicates a job title as "Draftsman, Forest Service." His name is not recorded in subsequent editions of the directory and his only cartographic credit is for the compilation of the 1917 folio of the Sioux National Forest. **Region 1**

Jones, Harold D. H. D. J. (Eastern Region, Washington, D.C.) The name H. D. Jones first appears in the November 1936 edition of the *Directory* of the Forest Service as being employed by the Engineering Division, Eastern Region as a draftsman. His first mention in the Washington, D.C. city directory came in 1938 working as a civil engineer in the Department of Agriculture. He compiled the 1936 map of the Green Mountain National Forest. **Region 9**

Jones, Howard R. H. R. Jones. (Pacific Southwest Region, San Francisco, California) The only listing for Jones in the San Francisco city directory came in 1931 when he was listed as being "with U.S. Forest Service." He is one of the topographers on the Shasta (1933) topographic map. **Region 5**

Jones, Lawrence V. L. V. Jones. (Northern Region, Missoula, Montana) The 1966 edition of the Missoula city directory listed a Lawrence V. Jones as working as a ranger for the Forest Service. This is the only reference found for Jones. Jones compiled and traced two 1961 maps for the Northern Region, the Beaverhead and Gallatin National Forests. **Region 1**

K

Kaemmerling, William H. W. H. Kaemmerling. (Pacific Southwest Region, San Francisco, California) Kaemmerling is listed in the 1936 and 1937 San Francisco city directories as working as a "forester" for the U.S. Forest Service, but is found in subsequent directories as simply as a "civil engineer" or as a "mapmaker." His one map credit is for the topography on the 1938 map of the Lassen National Forest. **Region 5**

Kadish, Walter. W. Kadish. (Southwestern Region, Albuquerque, New Mexico) For a single year only, 1922, the Albuquerque city directory lists Kadish as a "draftsman" for the U.S. Forest Service. His name appears on the 1922 regional map of the national forests of District 3. **Region 3**

Keefer, Frank C. Frank C. Keefer. (Washington Headquarters Office) Washington, D.C. directories list Keefer as being with the Department of Agriculture (1911), the Coast and Geodetic Survey (1912), then back with Agriculture (1914). He drew four maps of forests in the Southwestern District. **Region 3**

***Keer, R. F.** (Pacific Northwest Region) The only copy examined of Keer's 1916 map of the Umpqua National Forest has the note, "Map reduced from ½" Dist. tracing" and sent to Washington, D.C. for duplication. Since Keer cannot be found in the Portland city directories for the time period in which the map was made, it is most likely that Keer was working from Roseburg, Oregon, the headquarters of the Umpqua National Forest. **Region 6**

Kelly, Arthur W. A.W.K. (Pacific Northwest Region, Portland, Oregon) Kelly is first listed as being a "clerk" with the U.S. Forest Service in the 1935 edition of the Portland city directory and again in 1936. The 1937 city directory states that his occupation is that of a "draftsman" with the Forest Service and that he served in that capacity well into the 1950s. He is credited with compiling or editing 11 maps of the North Pacific Region. **Region 6**

***Kemp, Joan M.** Joan M. Kemp. (Northern Region) Kemp could not be found in Forest Service directories or in the 1943 to 1964 editions of Polk's Missoula city directories. She was responsible for tracing the 1953 map of the Deerlodge National Forest. **Region 1**

Ketchum, V. L. (Pacific Northwest Region, Portland, Oregon) Ketchum is listed in Portland city directories of this time as being a "surveyor" for the Forest Service and in 1918 as being a "draftsman" for the city's Commission of Public Docks. The directories do not provide the full names for the initials "V.L." Ketchum drafted the 1915 map of the Whitman National Forest, his only map credit. **Region 6**

Kinney, Alfred R. A. R. Kinney, Jr. (Eastern Region, Washington, D.C.; Southern Region, Atlanta, Georgia) Kinney never appeared in the Washington, D.C. city directory even though his name was carried from 1929 to 1934 as a survey examiner in

the Eastern Region's Engineering Division by the Forest Service staff directories. Land acquisition took place in several locations throughout the Eastern Region. Kinney probably worked in one of these outlying offices. By 1936, the Forest Service *Directory* locates Kinney in Asheville, North Carolina serving as the road superintendent on the Pisgah National Forest. The 1940 edition of the Atlanta city directory records his name and lists his occupation as an "assistant technician" with the Forest Service, but no listing for the 1941 edition. An interesting sequence of job titles are recorded in the Atlanta city directories for Kinney; 1942 photographic engineer without employer; 1943, civil engineer, without employer; 1944 defense worker, Bell Aircraft. In 1945, Kinney returned to the Forest Service as a civil engineer and remained there until 1948, when he transferred to the U.S. Public Health Service as a training specialist. He has two maps to his credit, one of Holly Springs National Forest (1940) and the Sylamore Ranger District, Ozark National Forest compiled in 1941. **Region 8**

Klamt, Henry. H. Klamt, H. K. (Pacific Southwest Region, San Francisco, California) Klamt's first mention in the San Francisco city directory came in 1926. From this year until 1932, he is listed as working as a draftsman for the civil engineering firm of F.H. Tibbitts. The April, 1932 edition of the Forest Service directory is first to list Klamt as being a Region 5 draftsman. The San Francisco city directory first lists his name in its 1933 edition. The 1960 San Francisco city directory still has Klamt employed by the Forest Service as a draftsman making him one of the longest serving and most productive cartographers the region had known with over 50 map credits. **Region 5**

Klemme, George W. Geo. Klemme, G. W. Klemme. (Pacific Northwest Region, Portland, Oregon; Rocky Mountain Region, Denver, Colorado) In 1921, Klemme compiled and traced an administrative map of the Siuslaw National Forest for the North Pacific District before being employed as a "draftsman" for the Rocky Mountain District. His name first appears in the Denver city directory for 1921 as a Forest Service employee, but by 1924 he had left the federal government for Denver Water, a public utility established in 1918. The public utility was then engaged in the ambitious task of building an aqueduct that would carry water from the western slope of the Continental Divide to Denver on the eastern slope. The centerpiece for this marvel of engineering would be the Moffat Tunnel that carried both water and the Denver, Rio Grande and Western Railroad mainline through the Rockies. **Region 2 & 6**

Knightlie, Napier. N. Knightlie. (Northern Region, Missoula, Montana) Knightlie was engaged in folio and topographic work for the District One between 1916 and 1919 and was listed in the 1915/16 edition of Polk's Missoula city directory as "Draftsman, Forest Service." This was the only time his name, occupation, and employer was recorded in an issue of the Missoula city directory. His map credit for the 1925 Flathead National Forest map was due to the fact that he worked on the earlier edition of the map in 1916, otherwise all his maps were issued before 1920. **Region 1**

Knox, Edward R. E. R. Knox. (Pacific Northwest Region, Portland, Oregon) Knox's brief career with the Forest Service lasted a mere two years. Only the 1921 edition of the Portland city directory identified him as a "draftsman" with the Forest Service and his name appears on two maps, the 1921 Cascade and the 1922 Colville National Forest map. **Region 6**

Koch, Elers Elers Koch. (Northern Region, Missoula, Montana) One of Pinchot's original "Forest Arrangers" appointed as the first Forest Supervisor for the Lolo, Bitterroot, and Missoula National Forests in December 1906, and long a fixture in the Northern Region and the city of Missoula. **Region 1**

Kuenzel, Paul E. P. E. Kuenzel, P.E.K. (Pacific Northwest Region, Portland, Oregon) Kuenzel started his drafting career in Portland, Oregon in 1918 with the contracting firm of Michael Lynott, Inc. By 1920 he was working as a draftsman for the Forest Service's District 6 and continued until 1925 when he transferred to the city of Portland's Bureau of Construction (Dept. of Public Works) as a draftsman. He had three map credits. **Region 6**

Kuphal, Herbert H. H. H. Kuphal. (Rocky Mountain Region, Denver, Colorado; Northern Region, Missoula, Montana) Kuphal began work as a "draftsman" for the Forest Service's District 2 office in 1917 and was active from 1917 to 1919, making three maps, when he transferred to District 1 in Missoula, Montana. His map credits for the Northern District began in 1921 and continued well into the 1930s with seven maps to his credit. During 1915 and 1916, the Missoula city directory lists Kuphal as a student at the University of Montana and later, the Missoula city directory for 1922/23, as an "engineer, Forest Service." According to Polk's 1938 Missoula city directory, he later became the "Resident Engineer" working for the Montana State Highway Commission. **Regions 2 and 1**

L

***A. W. L.** (Pacific Southwest Region) No directory could help in finding names to match the initials. This cartographer drew the 1955 regional map of the *National Forests of California*. **Region 5**

***E. L.** (Pacific Northwest Region) These initials have yet to be deciphered. Perhaps E.L. was a WPA enrollee and assigned to the Forest Service. These initials appear on several numbers of the Region's Recreation Guide Map series issued between 1935 and 1939. **Region 6**

***H. L. L.** (Eastern Region) Unfortunately, this cartographer responsible for the compilation of five small scale national forest maps of the former North Central Region issued in 1938 and 1939 could not be found in any reference book or directory. **Region 9**

LaCasse, John B. J. B. LaCasse. (Northern Region, Missoula, Montana) LaCasse first appears in Polk's 1929 Missoula city directory as a student at the University of Montana and the next year as a "sign writer" without employer. 1938 lists LaCasse as being a "draftsman," in 1955 as an "engineer," in 1958 as an "artist," and finally from 1959 to 1968 as an "illustrator" all with the Forest Service. His only credited work was the 1939 map of the Priest Lake Recreation Area of the Kaniksu National Forest. He retired in 1969. **Region 1**

Landon, Frederick E. Fred E. Landon, F.E. Landon. (Southwestern Region, Albuquerque, New Mexico) Landon's name first appeared in the 1916 Albuquerque city directory as Frederic C. Landon, but subsequent editions corrected this error giving his full name as Frederick E. Landon. Between 1916 and 1922, he is listed as being employed as a "draftsman, U.S. Forest Service. He is next a "Lumberman, S.W. District, U.S. Forest Service" in the 1923 city directory, then back the next year as a "draftsman," and rising to "Chief Draftsman" in 1927. This long-serving and prolific cartographer for the Southwestern Region, Landon left the employ of the Forest Service around 1948, retiring in Albuquerque with 37 map credits. **Region 3**

Lansing, Harold H. H. H. Lansing. (Northern Region, Missoula, Montana) Polk's Missoula city directory of 1917/18 lists Lansing as a "Ranger, Forest Service" and in 1922/23 as an "Instructor" at the University of Montana. The Missoula city directory for 1925/26 records his name as having died, May 19, 1923 at age 29. He worked on topographic, administrative, and proclamation diagram maps for the District having eight map credits to his name. **Region 1**

Last, Walter F. W. F. Last, W. F. L. (Eastern Region, Milwaukee, Wisconsin) At the time the Lakes States District was created in December of 1928, Last was working as a draftsman with the Smith Engineering Works in Milwaukee Wisconsin and directories of the city indicate that he continued to be affiliated with the Smith Works until 1932. At the depth of the Depression, his name can still be found in the Milwaukee city directory as a draftsman but without an employer after his name. That changed in 1934 when he began work compiling and revising maps for the Forest Service and continued doing so until 1942 with seven map credits. **Region 9**

Lawson, Aloysius L. A. L. Lawson. (Pacific Southwest Region, San Francisco, California) Lawson began his short career with the Forest Service in 1928 as a draftsman and is listed in the April, 1932 and April 1933 Forest Service directories. His map credits are for three topographic maps of the Klamath, Shasta, and Trinity National Forests issued between 1933 and 1936. **Region 5**

Leonard, William J. W. J. Leonard. (Pacific Southwest Region, San Francisco, California) Leonard began his cartographic career with the California District in 1929 and continued working there until after World War II. He was one of the many topographers credited on the topographic maps of northern California forests in the 1930s. **Region 5**

Lewis, Melvin H. M. H. Lewis. (Intermountain Region, Ogden, Utah) Lewis's name first appears in Polk's Ogden city directory for 1929 and lists Lewis as being employed as a "draftsman, U.S. Forest Service." His is employed by Region 4 in various capacities as a surveyor, transitman, employee, engineer, and clerk up until 1959. The *Official Register of the United States* has Lewis as the head of the Cartographic Section, Division of Engineering in Region Four throughout the 1950s with over 20 map credits mostly for administrative maps. **Region 4**

Lint, Leigh B. L. B. Lint. (Pacific Southwest Region, San Francisco, California) Lint first appears in the city directory in 1936 as a "topographer" for the Forest Service. Lint worked in the Gettysburg Office of the War Mapping Project during World War II and he continued to work for the Forest Service after the war. Three topographic maps of the Lassen, Shasta, and Stanislaus National Forests credit him as one of the topographers. **Region 5**

Littlefield, Theron R. Littlefield, T. R. (Intermountain Region, Ogden, Utah; Pacific Southwest Region, San Francisco, California) Littlefield served in the U.S. Army during World War I before joining the Intermountain District staff in 1921

until 1928. Ogden city directories alternately list his occupation as a surveyor and as a draftsman, but in all instances, until 1928, as working for the Forest Service. The 1928 Ogden city directory includes the note under Littlefield's name: "Moved to Berkeley, California." The 1928 San Francisco city directory confirms the move and that he fact that he began work for the California District as an "engineer" that same year until the mid-1950s. He compiled 10 maps for the Intermountain Region and was responsible for the planetable surveys of six topographic maps of northern California forests. **Regions 4 & 5**

Lockhard, Oliver C. O. C. Lockhart, O.C.L. (Intermountain Region, Ogden, Utah) The 1916 edition of Polk's Ogden city directory is the first time Lockhard is listed as being an employee of the Forest Service. In 1916 through 1918 his occupation is noted as being a "surveyor," then as an "engineer" in 1919. In 1920 he had transferred to the U.S. Bureau of Public Roads, then an agency of the Department of Agriculture, serving as an engineer. He compiled six maps, all in 1919, for the Cache, Caribou (2), Humboldt, Nevada, and Wyoming National Forests. **Region 4**

Lo Jacono, Salvatore S. Lo Jacono, S. LoJ. (Washington Headquarters Office, Eastern Region, Washington, D.C.) Lo Jacono is first listed in the 1920 edition of the Washington, D.C. city directory as being a "draftsman" for the Department of Agriculture. Forest Service directories first recorded his name in the April, 1932 edition and Lo Jacono's name last appeared in the January, 1960 issue. Early in his career, he drafted maps for western forests which indicates he worked for Headquarters Office before moving over to the Eastern Region. There, he drafted maps for national forests in the eastern United States including those that would, in 1934, become part of the Southern Region. The May, 1941 issue of the Forest Service directory has Lo Jacono serving in the Engineering Division of Region 7 and in the next edition of the directory, April, 1942, identifies him as part of the Washington Headquarters Office, indicating that Lo Jacono did not move with Region 7 from Washington, D.C. to its new headquarters in Philadelphia in 1941. His final project for the Engineering Division might have been in compiling the first edition of the reference work, *Establishment and Modification of National Forest Boundaries: A Chronological Record, 1891-1959* published by the Forest Service in September of 1959. **Regions 8 & 9**

Lord, Cecil A. C. A. Lord, C.A., C.A.L. (Pacific Northwest Region, Portland, Oregon) Lord first appears in the 1917 edition of the Portland city directory as a draftsman but without an employer listed. That changed in 1918 when he began work in District 6's Engineer Division as noted in the city directory. After 1918, he was listed in the city directory alternately as a "surveyor" or as a "civil engineer" and in 1926 as a "clerk." The Forest Service directories from 1924 to 1926 list Lord in the Engineering Section of District 6 working on roads. City directories of Portland after 1926 do not include his name. The 11 maps that he is credited with compiling were all made between 1918 and 1921. **Region 6**

Lubeck, Ernest A. Ernest Lubeck, E. Lubeck, E. A. L., E.L. (Intermountain Region, Ogden, Utah) There were three Lubeck's on staff in District 4 in 1912, Anton I., Ernest A., and Harold Lubeck. Anton served as a watchman and later as a janitor leaving after 1919; Harold was a packer, but left the Forest Service in 1914; Ernest remained until 1920, first as a printer, and from 1916 to 1920 as a "draftsman." Ogden city directories from 1920 onwards list Ernest A. Lubeck as a draftsman and later as an engineer for the U.S. Bureau of Public Roads, then an agency of the Department of Agriculture. An important early cartographer for the Intermountain Region, he is credited with 15 maps and proclamation diagrams. **Region 4**

M

***B.M.** (Pacific Northwest Region) These initials could not be found in the Portland City Directories of the 1930s when this cartographer or draftsman was active creating maps in Region Six's Recreation Guide Map Series and for the Oregon Skyline Trail and Washington State's Cascade Crest Trail (both later parts of the Pacific Crest Trail). He or she could have lived outside of Portland or had been a temporary employee of the Forest Service during the Depression. **Region 6**

***C. E. M.** (Pacific Southwest Region) The 1919 Route Map of the Trinity National Forest carries these initials as the person responsible for the drafting of the map. However, they could not be found in any directories examined. **Region 5**

***V.J.M.** (Eastern Region) These initials are found on the 1963 Boulder Lake Forest Trail Map of the Nicolet National Forest. Full names attached to the initials could not be identified. **Region 9**

***A, McQ.** (Washington Headquarters Office) Name could not be found in the Washington, D.C. or Ogden Utah directories of the time. This person drew the 1922 proclamation diagram creating the Lehman Cave National Monument in the heart of the Nevada (now Humboldt) National Forest. **Region 4**

***Maca, Leon F.** (Intermountain Region) This name could not be found in any directory for the city of Ogden or in Forest Service directories of the time. Maca is credited with revising the 1938 maps of the Payette and Uinta National Forests. **Region 4**

Marquez, Daniel C. D. C. M. (Southwestern Region, Albuquerque, New Mexico) First listed as an "employee" of the Forest Service in the 1937 edition of the Albuquerque city directory, then as a "draftsman" in 1938, Marquez could no longer be found in subsequent editions, which matches his single recorded map credit for the 1937 Tonto National Forest. **Region 3**

Marston, Richard. R. Marston. (Intermountain Region, Ogden, Utah) Marston was first found in the 1940 Ogden city directory as being a "Ranger" for the Forest Service, but by 1942, the directory notes that he had "moved to Layton" a town south of Ogden near the rapidly expanding Hill Air Force Base. Marston reappears in the Ogden city directory in 1946. His entry for that year indicates that he was working for the Forest Service as a "Conservationist." Thereafter, Marston no longer appeared in the Ogden city directories. He compiled the 1946 map of the Mono Division of the Toiyabe National Forest, reprinted with his name in 1951 and 1960. **Region 4**

Massie, Edmund S. E. S. Massie, E. M. (Washington Headquarters Office) Forest Service staff directories for this time period includes Massie within the Engineering Division's Technical Services branch. This branch included the atlas, drafting, photography and reports section. Massie compiled the 1950 map of the Eastern Region.

Mathis, Russell L. R. L. Mathis, R. L. M. (Southern Region, Atlanta, Georgia) Mathis came to the Forest Service in 1954 as a highly experienced draftsman. He is first found in the 1942 edition of the Atlanta city directory working for the National Resources Planning Board as a draftsman and the next year in the same capacity for its successor agency the U.S. Planning Board. In 1944 he transferred to the U.S. Civil Aeronautics Administration as a draftsman and later became an airport engineer. In the early 1950s he served as a draftsman with the Public Health Service and its successor agency the Federal Security Administration. He left the Atlanta area in 1958 but later returned and by 1973 Russell was in charge of the Cartography Section of the Southern Region's Engineering Division. His map credits all date from the 1950s for administrative map as well as recreation maps of southern national forests. **Region 8**

McConnell, Harold P. H. P. McConnell, H. P. M. (Rocky Mountain Region, Denver, Colorado; Eastern Region, Milwaukee, Wisconsin) McConnell made his first appearance in the 1924 Denver city directory, employed as a "draftsman' for the Forest Service and continued in that capacity until 1929 when he transferred from Denver to the newly created Lakes States District (District 9 – later the North Central Region) to be in charge of the Maps and Surveys Section. He held that position until 1933 when Frank F. Kemp took the title of Chief Draftsman. The 1928 map of the Superior National Forest was compiled by McConnell while he was working in Denver when the forests of the upper mid-west were administered by the Rocky Mountain District. A 1929 map of the Huron National Forest was compiled by McConnell after he had arrived in Milwaukee, Wisconsin. His name appears on 14 national forest maps. McConnell's name can be found in the Milwaukee city directories beginning in 1929 continuing to 1933 first as chief draftsman for the U.S. Forest Service's Region 9, then as an "engineer." In 1934, McConnell transferred from the Engineering Division to the Lands Division of the North Central Region where he is put in charge of land acquisition. The Division later takes on the name of the "Division of Recreation and Lands, Wildlife and Range Management." **Region 2 & 9**

***McCullough, T. E.** Southwestern Region) McCullough might have been a staff member on the Coconino National Forest based in Flagstaff, Arizona when he compiled the 1913 Coconino fire map. Unfortunately, city directories do not go back this far for Flagstaff and other smaller cities. He is not listed in any Albuquerque, New Mexico directory. **Region 3**

MacDaniels, Everett H. E. H. MacDaniels. (Pacific Northwest Region, Portland, Oregon) Early in his Forest Service career, MacDaniels most likely worked out of Medford, Oregon, the Forest Supervisor's headquarters for the Crater (later Rogue River) National Forest when he compiled the 1919 map of the Crater National Forest. This is the only map that carries his name. The 1926 Portland city directory records his name and lists his occupation as an "Inspector" with the U.S. Forest Service. The 1927 edition of the directory provided his full first name. **Region 6**

McGuire, Francis D. McGuire, F. D., F. D. M. (Eastern Region, Milwaukee, Wisconsin) McGuire began his career as a draftsman for the Forest Service in Milwaukee, Wisconsin in 1934 but left the agency in 1942. He is associated with the mapping of several purchase units administered by the North Central Region. **Region 9**

Mangel, John J. J. J. Mangel. (Southwestern Region, Albuquerque, New Mexico) Mangel became a draftsman for the Forest Service's Southwestern District in 1921. He is last listed in the Albuquerque city directory in 1925 as "Senior compiler, U.S. Forest Service." Thereafter, he is no longer listed as a resident of the city of Albuquerque. He compiled and traced ten maps for the District. **Region 3**

Meekham, Hofer S. H. S. Meekham (Washington Headquarters Office) The most productive U.S. Forest Service cartographer throughout the first three decades of the Forest Service, compiling folios on all Districts beginning in 1907, a

flurry of Proclamation diagrams from 1910 to 1915, and moving on to administrative maps, especially of the Eastern District. After 1920, when cartographic operations out in the District Offices came up to speed, his name disappears from administrative maps except for revised editions. He continued to work on Proclamation diagrams and administrative maps of the Eastern District (including southern forests) until about 1932 when the Washington, D.C. city directory ceases to record his name. Meekham was first listed in the Washington, D.C. city directory of 1910 as being with the "Dept. of Agr." His map output by region: 17 for Region 1; 16 for Region 2; 9 for Region 3; 31 for Region 4; 16 for Region 5; 20 for Region 6; 16 for Region 8; 2 for Region 9; 2 for Region 10.

Mehurin, Ellen L. E. L. Mehurin, E. L. M. (Washington Headquarters Office) Mehurin's name appears as the tracer/draftswoman/cartographer for many folio pages, proclamation diagrams, and administrative maps from 1915 to 1938 numbering a remarkable 90 map credits for maps of every region of the Forest Service. Towards the end of her career, she worked primarily on maps of the southern forests; her last map credits coming in 1938 for the Homochitto and Ocala National Forests. She can be found in Washington, D.C. city directories from 1912 to 1938. Her map output by region: 11 for Region 1; 10 for Region 2; 8 for Region 3; 7 for Region 4; 10 for Region 5; 6 for Region 6; 19 for Region 8; 13 for Region 9; 6 for Region 10.

Merriam, Clinton Hart. C. Hart Merriam. (Pacific Southwest Region, San Francisco, California) Merriam served as Chief of the U.S. Biological Survey between 1886 and 1910, then an agency of the U.S. Department of Agriculture. Hart drew the *Map of California showing National Forests and Main Highways, 1907.* **Region 5**

***Mooney, L. D.** (Eastern Region) Mooney has not been identified in any directory. His one map credit is for the corrections and additions made on the 1936 map of the Huron National Forest. He could have been a WPA hire or, like the unidentified G.I.B (above), a C.C.C. enrollee. **Region 9**

***Moore, R. H.** (Pacific Southwest Region) This name could not be found in San Francisco city or U.S. Forest Service directories. His earliest map credit is for the topography on the 1936 Shasta National Forest topographic map, then as compiler for three maps of the Lassen National Forest. Perhaps like E.M. Buckingham and C. Seid, Moore was stationed in Susanville, the Supervisor's Headquarters of the Lassen National Forest. **Region 5**

Morrow, Nicolas G. N. G. Morrow. (Pacific Southwest Region, San Francisco, California) Morrow served as a draftsman for the Forest Service in 1937 and has two topographic maps to his credit. **Region 5**

Murphy, Philip A. Phil A. Murphy. (Northern Region, Helena, Montana) The 1947 edition of Polk's Helena city directory lists Murphy as a "Draftsman" located at 117 ½ Broadway, Apartment 1, Helena, Montana. He drew the 1950 tourist promotional brochure for the town of Helena and the Helena National Forest, *Howdy & Welcome to Helena in the Heart of the Gold Country*. **Region 1**

N

***L. S. N.** (Southern Region) These initials could not be paired with a full name in any directory consulted. L.S.N. drew the *Mena Recreation Area of the Ouachita National Forest, 1969*. This could be the last map with a cartographer's initials on a Forest Service map. **Region 8**

***N. B. N.** N. N. (Pacific Northwest Region) The initials of one of the several persons who worked on the Region's Recreation Guide Maps between 1935-1939 and who cannot be identified. **Region 6**

Neiman, Lloyd I. L. I. Neiman, L. I. N. (Southwestern Region, Albuquerque, New Mexico; Southern Region, Atlanta, Georgia) Neiman is first listed in the 1925 edition of the Albuquerque city directory as a "draftsman, U.S. Forest Service." According to the map record and Forest Service directories, Neiman transferred to Atlanta, the newly created Southern Region's headquarters in 1935. His name last appeared in the 1934 Albuquerque city directory and first appeared in the Atlanta directory in 1935 working as a draftsman for the Department of Agriculture up to 1942. With Helen O'Neill, he became one of most productive cartographers of the Southern Region with a remarkable number of map credits to his name. For Region 3: nine maps; for Region 8: 50 maps. **Regions 3 & 8**

***Newhall, G.N.** (Pacific Southwest Region) This name could not be found in San Francisco city of U.S. Forest Service directories. It was rare to have map credits attached to a ranger district map, so there is a chance Newhall was stationed on the Plumas National Forest headquarters in the town of Quincy, California. His one map was of the La Porte Ranger District of the Plumas National Forest. **Region 5**

Nichols, George L. G. L. Nichols. (Intermountain Region, Ogden, Utah) Nichols joined the Engineering staff in District 4 in 1925 as "Chief Draftsman" according to Polk's Ogden city directory for that year and continued in the surveys and map section until late 1936 when he was put in charge of Buildings Section later known as the Structures and Related Buildings Section. Ogden city directories then identify Nichols as being an Architectural Engineer with the Forest Service. He has over 32 map credits for compiling, tracing, and revising maps. **Region 4**

***Noel, John P.** J. P. N. (Eastern Region, Washington, D.C.) The 1934 edition of the Washington, D.C. directory records the name of John P. Noel working as a lithographer who could very well be the name behing the initials "J. P. N." Atlanta city directories for this time period do not include any names that could apply. And it is important to note that even though a Southern Region was created in 1934 to manage the expanding national forests in the South, it was not until the next year, 1935, that administrative authority over the re-named (1935) Caribbean National Forest was transferred to the Southern Region from the Eastern Region. J.P.N.'s only map credit was for the 1934 Toro Negro Purchase Area, Puerto Rico. **Region 9**

Noel, Joseph Snider. J. S. Noel, J. S. N. (Washington Headquarters Office) Noel worked mostly on tracing folio pages for forests throughout the West and later Proclamation diagrams (27 map credits total) and is found in the 1910 Washington, D.C. city directory as being a "draftsman, Dept. Agr." Noel is also credited with the tracing and lettering of the special edition of the General Land Office map of Alaska, made for the Alaska-Yukon-Pacific Exposition, Seattle, Washington in 1909. He also followed up on his Alaska map by working on the two map set of the Chugach National Forest and the three map set of the Tongass National Forest both dated 1910.

Nordmark, Godfrey G., Jr. G. G. Nordmark, Jr., G.G.N., Jr. (Rocky Mountain Region, Denver, Colorado) Nordmark's name appeared in the 1929 Denver city Directory as a "Draftsman" for the Denver Phone Company. The next year he was working in that capacity for the U.S. Forest Service up to 1939. From 1940 onwards, Nordmark served Denver residents as an attorney. His name is found on six maps of Rocky Mountain National Forests. **Region 2**

Noyes, Clare B. C. B. Noyes, C. B. N. (Washington Headquarters Office) Noyes was another highly productive cartographer with a specialty in topography, but her name can also be found on proclamation diagrams, folio map plates, and administrative maps for all regions of the Forest Service except Alaska. Her name first appears on the Snoqualmie Folio of 1907 and last found on the 1940 Los Padres National Forest, Monterey Division administrative and topographic maps as the one who traced these maps. The 1940 credit probably notes her work on the 1934 Monterey Division map of the then named Santa Barbara National Forest. Her name can be found in city directories of Washington, D.C. beginning in 1915.

O

O'Neill, Helen D. H. O'Neill, H. O'N. (Southern Region, Atlanta, Georgia) In 1935 both the Atlanta city directory and the Forest Service *Directory* list O'Neill for the first time and indicate she worked as a draftsman. She went on to become one of the most productive cartographers of the Southern Region with over 30 map credits to her name. Before, during, and after World War II, she undoubtedly provided the continuity for the Engineering Division's drafting department. Atlanta city directories track her continuous service from 1935 to 1958. **Region 8**

Osborne, William Bush, Jr. Wm. B. Osborne. (Pacific Northwest Region, Portland, Oregon) Osborne moved from being an Assistant Forester on the Oregon National Forest headquartered in Portland in 1911 to a "Forest Examiner" in 1914 to being a "Deputy Forest Supervisor" in 1915. Later city directories note that his position with the Forest Service was that of an "Examiner." Forest Service directories place him in the Fire Control Division responsible for fire suppression in the Portland Office in 1916 until 1932 when he moved to Seattle, Washington and placed in charge of the "Cooperative Fire Equipment Project." By 1936 he was back a the Regional Office in Portland working in the State and Private Forestry Division, Private Forestry Section. Osborne is credited as being the cartographer for two maps, one dated 1913 and the other 1916, of the Oregon (later Mt. Hood) National Forest. **Region 6**

Oswald, Joseph M. J. M. Oswald, J. O. (Eastern Region, Milwaukee, Wisconsin) Like several other cartographers in Region 9, Oswald began his career with the Forest Service in 1934. Oswald operated out of the North Central Region offices in Milwaukee, Wisconsin, drawing maps (25 map credits) of the Region's many Purchase Units. He continued with the Forest Service until 1950. In that year the Milwaukee city directory stopped recording his name. **Region 9**

P

***O.M.P.** (Pacific Northwest Region) O.M.P. is credited with compiling the 1923 map of the Whitman Natioinal Forest but the initials could not be attached to any person listed in Portland city directories of the 1920s. **Region 6**

***V.P.** (Rocky Mountain Region) "V.P." can be found on the 1962 map of the *Black Hills National Forest of South Dakota and Wyoming,* but could not be found in any volume of the Denver City Directory of the time period. **Region 2**

***Paine, T. O.** T. O. Paine. (Northern Region) Paine could not be found in Forest Service directories or in Polk's city directories of either Missoula, Montana or Washington D.C. of the day. Two map credits for Paine are both for the Coeur d'Alene National Forest, the 1917 folio and the 1918 topographic map. Paine could have been stationed on the Coeur d'Alene, Idaho and not in Missoula, Montana. **Region 1**

***Parker, Gordon.** (Washington Headquarters Office?) Parker compiled the 1912 map of the Washakie National Forest, an early enough year for the Forest Service that the map could have been drawn either in Denver or in Washington for District 2. Parker's name could not be found in either the Denver or the Washington, D.C. city directories of the time. **Region 2**

Patterson, Wade B. W. B. Patterson, W.B.P. (Pacific Northwest Region, Portland, Oregon) The 1920 edition of the Portland city directory includes Patterson and lists his occupation as being a "draftsman," but without an employer. A Portland city directory was not published in 1922, but in 1923 Patterson's name can be found as a draftsman working for the U.S. Forest Service and in directories issued in 1925 and onwards, he is listed as an unaffiliated draftsman. By 1929 he was working as a draftsman for the U.S. Army Corps of Engineers, Portland Office. His six maps all date from the period 1921 to 1925. **Region 6**

Peterson, John L. J. L. Peterson. (Washington Headquarters Office) Listed in the 1918 edition of Polk's Washington, D.C. city directory as employed by the Department of Agriculture as an "engineer," Peterson drew the base map for the 1917 Wallowa National Forest Folio. **Region 6**

Peterson, Orrie R. O. R. Peterson. (Pacific Southwest Region, San Francisco, California) Peterson served only one year, 1937, with the Forest Service revising two maps. **Region 5**

Piniera, Felix M. F. M. Piniera, F. M. P. (Region 7, Washington, D.C.) Piniera began his career as a draftsman with the U.S. Census Bureau in 1931. By the time of the 1934 edition of the Washington, D.C. city directory, he is working as a clerk in the Agriculture Adjustment Administration, switching to the Eastern Region of the Forest Service in 1936. His work includes maps of the Cumberland, George Washington, Jefferson, Green Mountain and Monongahela National Forests. **Regions 8 and 9**

***Porter, R. W.** (Washington Headquarters Office?) Porter's name, like D.L. Raeburn's was searched in both Washington, D.C. and Portland city directories for 1909-1920 but could not be found in either. His one map, that of a District 6 map of 1913, could have been made either the Washington Headquarters Office or in the District Office in Portland. **Region 6**

Potter, Albert F. (Intermountain Region, Ogden, Utah) Albert F. Potter was hired by the General Land Office as an expert on grazing and, in 1902, working out of the Salt Lake City office of the G.L.O., he completed a survey of potential forest reserves in Utah. Potter went on to become a grazing inspector for the Forest Service in 1906 and was the agency's first Chief of Grazing. There are map credits with his name for two forest reserves in Utah and for three Grazing Atlases, Caribou (1915), Manti (1915), and Targhee 1913) National Forests. Potter also drew the *Map of the Logan Forest Reserve…, 1902* and the *Map of the Proposed Aquarius Forest Reserve in the State of Utah, 1903* for the General Land Office before joining the Forest Service. **Region 4**

Powell, James E. J. E. P. (Washington Headquarters Office) A "draftsman" with the Department of Agriculture according to the 1940 edition of Polk's Washington, D.C. city directory, Powell drew the 1940 map of the Deschutes National Forest. **Region 6**

***Power, W. H.** (Southwestern Region) Power could have been based in Flagstaff, Arizona, but there are no city directories of Flagstaff published that would allow confirmation. Albuquerque directories do not list the name. He worked on early maps of the Grand Canyon Game Preserve and Coconino National Forest, circa. 1908. **Region 3**

R

***C. E. R.** (Eastern Region) These initials could not be attached to any name listed in the Milwaukee, Wisconsin city directories. This person revised the 1937 map of the Chequamegon National Forest, Flambeau Division, Wisconsin. **Region 9**

***Radzeszewski, J. A.** (Eastern Region) This name was not found in the Washington, D.C. directories for the 1930s. Radzeszewski traced the Monongahela Proclamation Diagram and Monongahela National Forest map of 1936. **Region 9**

Ralph, Horace F. H. F. Ralph. (Intermountain Region, Ogden, Utah) Ralph was first listed as an "operator" for the Forest Service in the 1932 edition of Polk's Ogden city directory which is in line with the *Forest Service Directory* of April 1932 and April 1933 in which Ralph is identified as a "Blue printer." When he compiled the 1937 map of the Ruby Division, his only map credit, he held the job of "draftsman." By 1938 his title had changed to "Assistant topographic engineer," then, 1944, to "Civil engineer, and finally, in 1952 to "Surveying engineer" all with the Forest Service. The last known job title held by Ralph listed in the 1959 Ogden city directory was "Transportation Systems Planning" for the Forest Service. **Region 4**

Rawlins, Fabiola G. F.G. Rawlins, F.G.R. (Southwestern Region, Albuquerque, New Mexico) Fabiola G. Rawlins is the married name of the former Miss Fabiola R. Gilmore, who was employed as a draftsman for the Forest Service between 1920 and 1923. From 1924 to 1930 she was not listed in the Albuquerque city directory under either name. In 1931, she and her husband, Frank B. Rawlins, appeared for the first time in the Albuquerque city directory, which noted that she was once again serving as a "Draftsman, U.S. Forest Service." She served in that capacity up to 1959. The 1960 directory lists her and her husband as "Ranchers." Her last map credit was the 1958 administrative map of the Sitgreaves National Forest and had a total of 33 years with the Southwestern Region with her name on 29 maps. **Region 3**

Ray, Ted. (Eastern Region, Upper Darby, Pennsylvania) Ray revised the 1962 pictorial map of the White Mountains National Forest. **Region 9**

***Reaburn, D. L.** (Washington Headquarters Office?) Reaburn's name, like R.W. Porter's was searched in both Washington, D.C. and Portland, Oregon city directories for 1909-1920 but could not be found in either. His one map, that of a District 6 map of 1913, could have been made either the Washington Headquarters Office or in the District Office in Portland. **Region 6**

Reed, Theodora. T. R. (Northern Region, Missoula, Montana) Reed was a student at the University of Montana in Missoula between 1927 and 1931 according to that city's directory. She began her career with the Forest Service in the late 1930s. She was recorded as being a "Clerk Forest Service in the 1938 edition of Polk's Missoula city directory then as a "Draftsman" from 1942 to 1955. She began her career making recreation area maps (Deerlodge & Flathead) and moved on to making the 8-mile administrative and forest visitor maps of the 1950s. The two 1953 maps of the Colville National Forest were compiled during the time in which the Colville was administered by the Northern Region. **Region 1**

Reese, Ed L. E. L. Reese. (Eastern Region, Washington, D.C.) Like his colleague Alfred R. Kinney, Reese is listed in the April 1931 edition of the Forest Service *Directory* as being an examiner of surveys for the Eastern Region. Since land acquisition took place in several different locations throughout Region 7, there is a good chance Reese worked outside the Washington, D.C. area in one of these outlying offices, especially since his name cannot be found in the pages of the Washington, D.C. city directories for this time period. Reese's name turns up again in the Forest Service *Directory* of November 1935 as the road superintendent for the DeSoto Purchase Unit based in Jackson, Mississippi. Reese drew two maps of the Ouachita National Forest in 1931. **Region 8**

Renie, Jack J. J. J. Renie, J. J. R. (Pacific Northwest Region, Portland, Oregon) Renie is listed in the Portland city directory for only one year, 1923, as being a "draftsman" with the U.S. Forest Service. He compiled, drew, traced and revised three maps for the Forest Service. **Region 6**

Renner, Edwin Ross. E. R. Renner, E. R. R. (Eastern Region, Milwaukee, Wisconsin) The Milwaukee city directory first lists Edwin R. Renner in its 1935 edition as a draftsman for the U.S. Forest Service. In 1937 the form of his name has changed to E. Ross Renner and in the following year his job title became "topographic draftsman." The Milwaukee city directory stopped carrying his name in 1941. Renner compiled and traced proclamation diagrams, small scale forest visitor's maps, and administrative maps for national forests and purchase units for his region. **Region 9**

Reuter, Rosemarie. R. Reuter. (Eastern Region, Milwaukee, Wisconsin) The 1952 edition of *Wright's Milwaukee City Directory* is the first to include Reuter's name followed by her occupation of draftsman, and her employer, the U.S. Forest Service. She later married Mr. William T. Bowman (1954?) and changed her name to Rosemarie Bowman. Her map credits after marriage are given as R. Bowman. As Reuter, she revised the 1953 map of the Ottawa National Forest.
Region 9

Riemenschneider, Carl E. C. E. Riemenschneider. (Eastern Region, Milwaukee, Wisconsin) Although Riemenschneider's name never made it into the pages of the official U.S. Forest Service staff *Directory,* the pages of *Wright's Milwaukee City Directory* recorded his name over the years and his various occupations. In 1929 he is a draftsman for the R.E.O. Building and Realty Company, then as student, architect, again as a draftsman with the U.S. Forest Service in 1935. In 1936 he is recorded working as a construction supervisor for a plate glass installation company and finally in 1937 as the principal owner of the Economy Company, Inc, a contracting firm. Between the 1938 edition of the Milwaukee city directory and the 1948 issue, his name was not listed, but in 1949 Riemenschneider's name came back to the directory with his occupation as an architect. His name appears in the cartographic credits for six purchase unit maps and the Huron National Forest issued between the years 1935 and 1937. **Region 9**

Ringland, Arthur C. A. C. Ringland (Southwestern Region, Albuquerque, New Mexico) At the time Ringland compiled the 1914 map of the Sitgreaves National Forest, he was the District Forester for District 3. **Region 3**

Robertson, Richard H. R. H. Robertson, R.H.R. (Pacific Northwest Region, Portland, Oregon) Most likely the first draftsman to work for District 6 in Portland, Oregon, as he is found in 1909 Portland city directory employed by the Forest Service. The map record and city directories of the time would indicate that he stopped working for the Forest Service around 1920, although still a resident of Portland. His map record of 19 maps begins with a 1913 map of the National Forests of District 6 and his last map in 1919 of the Siskiyou National Forest. **Region 6**

Rossoll, Harry L. H. L. R. (Southern Region, Atlanta, Georgia) Rossoll was an illustrator in the Forest Service's regional office in Atlanta from the mid 1930s onwards. His more than 1000 "Smokey Says" newspaper cartoons helped make Smokey Bear an almost universally recognized symbol of forest fire safety and one of the most successful public relations campaigns ever. While he is most remembered for his Smokey Bear illustrations, his signature can be found on many of the panel illustrations decorating the covers of recreation and forest visitor maps of National Forests of the Southern Region. His one map credit was a pictorial map of the Ouachita National Forest, circa. 1940. Listed Atlanta city directories beginning in 1938 to the 1960s alternately as an "Artist," "Illustrator," and "Visual Information Specialist" with the Forest Service. **Region 8**

***Ruth, C. H.** C. H. Ruth, C. H. R. (Northern Region) Ruth's work was primarily concerned with topography as evidenced by this name being attached to single sheet topographic maps as well as topographic Atlas Folio pages. Ruth could not be found in Forest Service directories or in Polk's city directories of Missoula, Montana or Washington, D.C. of the day. Most of his topographic work was on national forests of Idaho (Coeur d'Alene, Kaniksu, and Pend Oreille) which might indicate he was based on an Idaho forest, perhaps in Sandpoint or Coeur d"Alene, Idaho. **Region 1**

S

***C.S.** (Pacific Northwest Region) Only one map is attached to these initials, the 1942 map of the Blue Mountains and Minam Divisions of the Whitman National Forest. Using the Portland city directories, the initials could not be deciphered, which might indicate that C.S. was based in Baker, Oregon, the Supervisor's Headquarters of the Whiteman National Forest. **Region 6**

***E. M. S.** (Southwestern Region) This cartographer, whose initials could not be matched with a complete name using the city directories for Albuquerque for the late 1950s, early 1960s, was the last to be given credit for a map of the Southwestern Region. E.M.S. drew the 1959 map of the Gila Wilderness Area. **Region 3**

***F. P. S.** (Pacific Northwest Region) This technician was responsible for revising the 1925 map of the Columbia National Forest and might not have remained in the Portland, Oregon area long enough to be recorded in the city directories of this time. The Columbia National Forest was headquartered in 1925 in Portland along with District Headquarters. **Region 6**

***F. P. S.** (Eastern Region) A cartographer with the initials F.P.S. compiled and drafted a map of the Chequamegon National Forest's Mondeaux Division in 1934, but the Milwaukee city directories could not help in identifying the person belonging to the initials. **Region 9**

***L. E. S.** (Eastern Region) Milwaukee city directories from the mid-1930s were checked for these initials, but were not found. L.E.S. was the compiler for the 1936 map of the Huron National Forest. **Region 9**

***M. C. S.** (Southern Region) M.C.S. could have been a temporary employee of the Forest Service's Southern Region when the only map associated with these initials revised the Conecuh National Forest map. Atlanta city directories from the mid-1930s were examined and did not offer a name that could be associated with the initials. **Region 8**

***T. F. S.** (Pacific Southwest Region) T.F.S. drew the 1938 map of the Southern Redwood Purchase Unit. These initials could not be deciphered using the San Francisco city directories. **Region 5**

***V.M.S.** (Pacific Southwest Region) This cartographer drew the 1936 map of the Southern Redwood Purchase Unit but could not be found in the San Francisco city directories. V.M.S. might have been a temporary employee assigned to the Forest Service by one of several jobs agencies active during the Depression. No other maps carried these initials. **Region 5**

***W. A. S.** (Southwestern Region) W.A.S. drew a temporary base map for the Lincoln National Forest in 1914 and could have been located at the forest's headquarters in Capitan, New Mexico. The city directories for Albuquerque were examined for these initials for the years surrounding 1914 and no listing could be found that would fully identify W.A.S.
Region 3

Sabine, R. Ray. R. R. Sabine. (Washington Headquarters Office) Indications are that Sabine worked from the Washington Headquarters Office and not from Missoula. Sabine's only map credits are for tracing three maps of the Northern District, the Gallatin in 1918 and the Coeur d'Alene and Madison in 1919. Sabine is listed as being employed as a "draftsman" for the Department of Agriculture in the 1920 edition of the Washington, D.C. city directory but not in the directories for Missoula.

Sargent, Charles Sprague. C.S. Sargent. (1841-1927) Sargent, a botanist, was appointed the first director of Harvard University's Arnold Arboretum. He served on the committee appointed by the National Academy of Sciences to report on the inauguration of a forest policy for the forested lands of the United States. Earlier, he had drawn sixteen maps accompanying the 1880 "Report on Forest Trees of North America, issued by the Bureau of the Census.

Saunders, Albert G. A. G. Saunders, A. Saunders, A. G. S., A. S. (Intermountain Region, Ogden, Utah) The 1938 Ogden city directory first lists Saunders as working as a Blue printer for the Forest Service continuing in that capacity until 1944 when he was identified as being a "draftsman" and later as an "engineer." His Forest Service career as a cartographer extended well into the 1960s with over 20 map credits to his name. **Region 4**

Schach, Audrey C. A. C. Schach. (Southwestern Region, Albuquerque, New Mexico) Schach is listed as being a "draftsman, U.S. Forest Service" in the Albuquerque city directories of 1916-1923 and has four maps with her name as either a compiler or as a tracer. **Region 3**

Schach, Marie A. (Southwestern Region, Albuquerque, New Mexico) Over a three year period, 1917-1919, Marie A. Schach, perhaps a relative of Audrey C. Schach (above), was listed in Hudspeth's Albuquerque city directory as being employed as a "Map colorist, U.S. Forest Service." Even though her name does not appear on any map, she deserves credit here and a place in this listing. **Region 3**

Schade, Frank P. F. Schade. (Pacific Northwest Region, Portland, Oregon) Schade is listed in the Portland city directory for only one year, 1924, as being a "civil engineer" with the U.S. Forest Service. Schade has one map credit for the revision of the 1924 map of the Siskiyou National Forest. **Region 6**

Scheaffer, Morris A. M. Scheaffer, M.A. S. (Rocky Mountain Region, Denver, Colorado) Scheaffer came to the Rocky Mountain District as a "draftsman" in 1924 and remained until 1929. Denver city directories stopped carrying his name in 1930. The 1927 map of the Michigan National Forest was made at the time when the national forests of Michigan were administered from Denver. His other five map credits are attached to national forests of the Rocky Mountain District and made between 1927 and 1930. **Region 2**

Schoedinger, Jack A. Jr. J. A. Schoedinger. (Southwestern Region, Albuquerque, New Mexico) Schoedinger appeared in the 1938 edition of the Albuquerque city directory, but without an occupation. His name appeared again in the 1939 directory, this time as being a "draftsman" for the Forest Service. Subsequent directories do not list his name, reflecting his one map credit, that of the 1940 map of the Prescott National Forest. **Region 3**

Sealing, Herman Ellis. Herman E. Sealing, H. Ellis Sealing, H.E. Sealing. (Rocky Mountain Region, Denver, Colorado) Sealing first appeared in the Denver city directory in 1911 employed by the Clason Map Company as a "draftsman" and continuing at the commercial map company until 1917. The 1918 directory has Sealing employed as a "draftsman" for the Forest Service for the first time. By 1922, Sealing had moved on to the U.S. Reclamation Service's Denver Office as a "draftsman" and later as an engineer. His maps of the Michigan and Superior National Forests were made at the time when the national forests of the Great Lakes region were administered from Denver, otherwise his other ten map credits were for forests of the Rocky Mountain District made between 1917 and 1922. **Region 2**

Sedelmeyer, Herman A. H. A. Sedelmeyer. (Pacific Southwest Region, San Francisco, California) Sedelmeyer began his cartographic career with the Forest Service in 1917 and was active well into the 1940s. His 26 map credits for administrative and topographic maps of California national forests mark him as being one of the most productive cartographers of the Region. His maps were updated and reprinted guaranteeing that his name would continue to be associated with his work. **Region 5**

***Seid, C.** (Pacific Southwest Region) This name could not be found in San Francisco city of U.S. Forest Service directories. Perhaps like E.M. Buckingham and R. H. Moore, other topographers mentioned on the 1938 topographic map of the Lassen National Forest, C. Seid was stationed in Susanville, the Supervisor's Headquarters of the Lassen National Forest. **Region 5**

Sellman, Wallace A. W.A. Sellman. (Pacific Southwest Region, San Francisco, California) San Francisco city directories and Forest Service staff directories never include Sellman's name, but the city directories list Wallace A. Sellman as a "draftsman" without an employer in 1940 and again in 1945 indicating war service. In 1951 Wallace A. Sellman was working as a draftsman for the U.S. Coast and Geodetic Survey. Directories after this date carry Sellman's name as a teacher for the San Francisco Unified School District. W.A. Sellman's name is attached to the 1948 forest visitor's map of the Modoc National Forest as the person who revised the map. **Region 5**

Serex, John F. J. F. Serex. (Pacific Southwest Region, San Francisco, California) Serex joined the Engineering Division staff of the California District in 1924 and for a career that lasted well into the 1940s he has only one map credit, that of the compiler of the 1930 Plumas National Forest topographic map. City directories of the time list Serex alternatively as a draftsman and as a forester into the late 1950s. **Region 5**

Shafer, Florence I. F. Shafer. (Intermountain Region, Ogden, Utah; Alaska Region, Juneau, Alaska) Shafer began her career with the Forest Service in 1910 working for District 4 as a draftsman. The 1915 Ogden city directory has her serving the Forest Service as a Geographer and from 1918 to 1920 as "chief draftsman" for the District. The next year, Shafer was on her way to work in the Engineering Department of the newly formed Alaska District along with Phyllis I. Dennee of the Rocky Mountain District – two experienced Forest Service cartographers – to set up the new drafting unit in Juneau. Shafer worked in Juneau as Chief Draftsman until well into the 1940s as recorded in the Forest Service official directories; Dennee returned to Denver to work for the U.S. Surveyor General in 1927. Shafer's lone map credit for the District 4 was for the 1913 Wyoming National Forest map; all others (7) were of Alaska national Forests. She was also responsible for the 1938 map poster of the Tongass National Forest "Region of Fiords and Forests, Nature Unchanged."
Regions 4 & 10

Shank, Henry M. H. M. Shank. (Intermountain Region, Ogden, Utah) Shank joined District 4 in 1923 as a "draftsman" but Polk's Ogden city directory for the years following lists several occupations for Shank: draftsman; engineer; department manager; assistant engineer; clerk; and sometimes, just employee. The year 1936 finds Shank as the Forest Supervisor for the Idaho National Forest serving until 1941 when he was named Assistant to the Assistant Regional Forester and later, in 1944 as Assistant Regional Forester. Shank is no longer found in directories after 1947. 14 maps carry his name as compiler for the Intermountain Region. His two maps for the Kaibab National Forest dated 1926 and 1930 were made when the Kaibab was administered as part of Region 4. **Region 4**

Shaw, John A. J. A. Shaw. (Eastern Region, Washington, D.C.) Shaw was a draftsman for the U.S. Treasury Department in the early 1930s before transferring his skills to the Forest Service in 1937, where he earned only map credit as the compiler on the 1938 map of the Dry River Ranger District of the George Washington National Forest. The 1937 edition of the Washington, D.C. city directory was the only one that recorded his name as working for the Forest Service. Subsequent directories do not carry his name at all. **Region 8**

Shaw, Rose S. R. S. Shaw, R. S. S. (Washington Headquarters Office) Shaw first began her work in the Washington, D.C. Office tracing folio sheets for California forests in 1914. Up until 1930 she worked on maps for all regions of the Forest Service, moving on after that date to compiling and tracing duties for maps of the eastern United States. Her last map credit is for the 1937 map of the Cumberland National Forest. Her last entry in the Washington, D.C. city directory as a draftsman with the Forest Service came in 1941. Her work included folios, administrative, recreation, ranger district, and purchase unit maps for all regions except Regions 2, 3, and 10. Early maps were made for western national forests and over time more of her work was on forests of the eastern United States. With the creation of the Southern Region in 1934 she worked exclusively on maps of the eastern national forests. She might have retired in 1941 rather than be transferred to Upper Darby, Pennsylvania, then the new headquarters for the Eastern Region (Region 7).

Shelley, Ralph S. R. S. Shelley. (Pacific Northwest Region, Portland, Oregon) Shelley is first listed in the Portland city directory of 1909 as being the Deputy Supervisor of the Oregon National Forest. He later became Supervisor of the Siuslaw

National Forest in 1918 and held that position for 20 years. With William B. Osborne, Shelly compiled the 1913 Oregon National Forest map. **Region 6**

Shields, John F. J. F. Shields, J. F. S. (Northern Region, Missoula, Montana) Sheilds was a student at the University of Montana between 1930 and 1933 before beginning his career with the Forest Service in 1936. His eight map credits show a versatile cartographer working on all types of maps for the Region made between 1936 and 1939. Shields can first be found in Polk's Missoula city directory of 1930/31 and again in 1934 and 1936, but his name was never associated with the Forest Service in any of Missoula's city directories. **Region 1**

Simerl, Rudolph A. R. A. Simerl, R. A. S. (Eastern Region, Milwaukee, Wisconsin) Simerl's name can be found in the 1936 edition of the staff *Directory* issued by the Forest Service as serving as a draftsman in the Engineering Division of the North Central Region. Milwaukee city directories during this time, however, record his name followed by the enigmatic "clerk" without an employer. In 1938, he is listed as an "artist" and not listed at all in 1939 and 1940, even though he does have map credits for 1940 and 1941. With over 20 map credits to his name for regional maps, national forest maps, and purchase unit maps, makes his productivity for a five year period rather remarkable. **Region 9**

Simons, Sprague T. S.T. Simons, S.T.S. (Northern Region, Missoula, Montana; Intermountain Region, Ogden, Utah; Pacific Northwest Region, Portland, Oregon) With his over 20 map credits being the guide, Simons began his cartographic career with the Forest Service in 1919 on the Northern District, then moved on to work for the Intermountain District (1925 Fishlake National Forest map) and finally with the North Pacific District, 1926-1942. The 1926 edition of the Portland city directory includes his name as a "draftsman" with the U. S. Forest Service and city directories for Portland, Oregon thereafter carry his name well into the 1950s as working in that capacity for the Forest Service. **Regions 1, 4, & 6**

Sizer, Francene E. F. E. Sizer (Washington Headquarters Office) Sizer was active from 1921 to the late 1940s working in the Washington Headquarters office assigned to make maps of all Districts except the Rocky Mountain District. She later came to focus on the mapping the southern forests, although she did not transfer to Atlanta, Georgia, the headquarters of the Southern Region. The last of her 30 map credits came in 1945 and 1946 on two maps of the Caribbean National Forest. Her name can be found in city directories of Washington, D.C. during her active period until 1941.

Skidmore, J. Fred. J. Fred Skidmore. (Northern Region, Missoula, Montana) Skidmore was active during the last half of the 1930s tracing topographic and administrative maps as a "draftsman" for the Forest Service according to the 1936 and 1938 editions of Polk's Missoula city directory. However, his first name beginning with the letter "J" could not be discovered. His name is found on six maps of Northern Region national forests. **Region 1**

Skoblin, Serge K. S. Skoblin. (Northern Region, Missoula, Montana) Listed as a "draftsman" for the Forest Service according to the 1938 edition of Polk's Missoula city directory, Skoblin later worked as a draftsman with the Missoula County Surveyor (1955) and by 1958 was serving as a "civil engineer" with the Montana State Highway Department. He traced the administrative and topographic maps of the Helena National Forest in 1939 with reprints made in 1947. **Region 1**

Smith, Helen B. H. B. Smith, H. B. S. (Washington Headquarters Office) The earliest map credit for H.B. Smith was for the 1914 Kern (California) Folio. Her cartographic credits for nearly 30 maps are primarily for Proclamation diagrams for the Eastern District (before 1934 included southern national forests) forests in the 1920s and several maps for the Northern, Intermountain, and California Districts. She can be found in city directories for Washington, D.C. from 1914 to 1941 as working in various capacities with the Forest Service. She might have chosen retirement instead of transferring to Upper Darby, Pennsylvania, in 1941, the new Regional Headquarters for the Eastern Region (Region 7).

Smith, Raymond H. R. H. Smith, R.H.S., R.S. (Pacific Northwest Region, Portland, Oregon) Smith is first listed in the 1937 Portland city directory as being a "draftsman" for the U.S. Forest Service. This edition also listed his name as simply Raymond Smith, while the 1940 edition of the directory includes his middle initial "H." This fact allows the inclusion of two maps with the credit "R.S." under his full name, including several numbers in the Recreation Guide Map series between 1935 and 1939. Listed as draftsman with the Forest Service from 1937 to 1941, but not during the war years, he has three national forest administrative maps to his credit. Portland Oregon city directories after the war identify Smith as being an "engineer" with no affiliation to any particular employer. **Region 6**

Smith, Ralph C. R. C. Smith. (Southwestern Region, Albuquerque, New Mexico) In 1944 Smith worked as a "draftsman" for the U.S. Grazing Service, an agency of the Department of the Interior. The Grazing Service merged in 1946 with the General Land Office to establish the Bureau of Land Management. His one map citation was for revising the 1946 map of the Gila National Forest. City directories of Albuquerque indicate that he transferred to the U.S. Forest Service in 1946. **Region 3**

Spaun, Calvin S. Calvin Spaun, C. Spaun, C. S. (Intermountain Region, Ogden, Utah) Spaun started his professional career as a draftsman with the Ogden architectural firm of Hodgson & McClanahan in 1922 and worked for the firm until 1932. Ogden city directories for 1933 and 1934 continued to list Spaun as a draftsman and clerk, but without an employer. 1935 finds him serving as a draftsman for the U.S. Forest Service, Intermountain Region for the first time. His nearly 60 map credits far surpass any other Region 4 staff member and extend from 1936 to 1960. The Ogden city directories of 1959 and beyond lists his role in the Forest Service as an "Architect." **Region 4**

Stadler, George H. G. H. Stadler. (Northern Region, Missoula, Montana) The Flathead Folio of 1916 lists a "G.H. Stabler" in the map credits as the one who traced the maps, but this is a misspelling, a mistake which is repeated in the 1925 and 1933 topographic maps of the Flathead National Forest. The 1915/15 and 1917/18 editions of the directories for the city of Missoula list Stadler as "surveyor" for the Forest Service. He was responsible for the drafting of three folios and two topographic maps for the Northern District. **Region 1**

Steele, Byram W. (Rocky Mountain Region, Denver, Colorado) Steele is identified in the 1921 through 1925 editions of the Denver city directory alternately as a "Civil engineer" and as a "draftsman." He was never listed as being an employee of the Forest Service. The Battlement (later the Grand Mesa) National Forest covered areas where there were incongruities in the original federal survey. The Forest Service in mapping the forest went to another federal agency for map control data and the most current public land grid. Steele was given credit for "projections and land lines" for the Battlement and Grand Mesa National Forest maps of 1922 and could have been a contractor. **Region 2**

Stelling, David G. D. Stelling. (Northern Region, Missoula, Montana) First listed as a "student" according to the 1938 edition of Polk's Missoula city directory and in Polk's Missoula directory of 1940/41, Stelling's name is listed but this time without an occupation or employer. The directory of 1943 indicates that he was serving in the U.S. Army Air Corps. Stelling compiled the 1941 Bob Marshall Wilderness map. **Region 1**

Stephenson, William P. Stephenson, W. P. or (by mistake) Stephens, W.P. (Northern Region, Missoula, Montana) Stephenson is first listed in the 1917/18 edition of Polk's Missoula city directory occupied as a "Topographic draftsman" for the Forest Service and in the 1922/23 edition as a "surveyor, Forest Service." Unfortunately, the 1917 Sioux Folio incorrectly gives "W. P. Stephens" credit for a few map sheets in the folio. Both the 1922/23 edition of the Missoula city directory seconds the October 1922 Forest Service staff directory includes a W. P. Stephenson as working for the Forest Service as a "surveyor." Stephenson was in charge of entry surveys for the Northern District and in 1925 became part of the Roads Section of the Engineering Division where he remained well into the late 1930s. **Region 1**

Stimac, P. T. (Eastern Region, Ottawa National Forest, Supervisor's Headquarters, Ironwood, Michigan) Stimac's only map credit was for the 1937 Ottawa National Forest map and its 1953 revision. To quote from the map's statement of responsibility, "…compiled at Supervisor's and Regional Offices from G.L.O.,U.S.G.S., Forest Service and other surveys by P.T. Stimac and R.A. Simerl…" it stands to reason that, most likely, Stimac was the cartographer based at the Ottawa National Forest's Supervisor's Office in Ironwood, Michigan and R.A. Simerl based at the Regional Office in Milwaukee, Wisconsin. Stimac's name could not be found in the Milwaukee city directories of the time period. **Region 9**

Stoner, Sidney N. S. N. Stoner. (Pacific Southwest Region, San Francisco, California) The 1914 edition of the city directory for San Francisco lists Stoner as a "Forest Examiner" with the U.S. Forest Service who resided in Berkeley, California. His name is absent from city directories from 1925 onwards. His first map credit cites him as the Forest Examiner for the 1917 Monterey National Forest map. On his other three maps he was listed as the one of the several topographers working on the Shasta (1933), Klamath (1934, and Trinity (1936) topographic maps. **Region 5**

Stowell, Henry W. Henry W. Stowell. (Washington Headquarters Office) Stowell is listed as a "draftsman" for the Department of Agriculture in the 1935 edition of Polk's Washington, D.C. city directory which matches his only map credit, that of the 1935 regional map, *National Forets of Region 3*. Stowell was responsible for the compilation and tracing of the map. **Region 3**

Swan, Joseph S. Joe S. Swan, J. S. Swan, J. S. (Northern Region, Missoula, Montana) Swan spent the years 1930 to 1934 as a student at the University of Montana in Missoula before starting his cartographic career with the Forest Service. Active in the late 1930s on administrative and topographic maps, he is also credited with preparing the 1954 forest visitors map of the Jefferson Division, Lewis & Clark National Forest. Swan is listed as being a draftsman for the Forest Service according to the 1938 edition of Polk's Missoula city directory. Missing from directories for the war years, Swan reappeared in the 1948 edition of the Missoula city directory as an engineering aide with the Forest Service. He was part of the Northern Region's Engineering Division until his retirement in 1973. His name appears on seven maps and their revisions and reprintings. **Region 1**

Swan, Kenneth Dupee. Swan, K. D. (Northern Region, Missoula, Montana) Swan was an active cartographer between 1915 up to 1921. Polk's 1915/16 and 1917/18 editions of its Missoula city directory gives his occupation as "Examiner, Forest Service" and later in the 1922/23 edition of the city directory Swan became a "publicity assistant." The October, 1922 edition of the Forest Service staff directories place him in the Public Relations office reporting to the District Forester and also continues with his earlier job title as "Forest Examiner." That changed in 1925 when the job title of Forest examiner was dropped and Swan became a full time public relations staff member. Consulting the Forest Service directories as well as city directories, K. D. Swan worked full time in public relations for the Northern Region well into the late 1940s. His earliest map dated from 1915 and his last was the 1928 map of the Custer National Forest. **Region 1**

Swan, Walter Hughey. W. H. S. (Rocky Mountain Region, Denver, Colorado) Swan joined the Rocky Mountain Region as a "draftsman" in 1935 and worked for the Region through 1941. Before 1935 and after 1941, he was listed in the Denver city directory as being a civil engineer. After a seven year tenure with the Forest Service, Swan had only one map credit. That one credit was for the 1940 revision of *National Forests of the Rocky Mountain Region, Region 2, 1940.*
Region 2

T

***A.A.T.** (Eastern Region) A.A.T. compiled the section maps for the White Mountain National Forest for the 12 page atlas. A.A.T. might have been assigned to the forest headquarters at Laconia, New Hampshire. **Region 9**

Tayloe, Imogen I. I. I. T. (Washington Headquarters Office) Tayloe is listed in Polk's 1908 Washington, D.C. city directory as being employed by the Department of Agriculture as a "draftsman." She is credited with tracing the Leadville and Pike Folios for District 2 and for the Chelan and Rainier Folios for District 6. **Regions 2 & 6**

Taylor, Charles L. C.L.T. (Washington Headquarters Office) Taylor is listed in the 1908 Washington, D.C. city directory as being employed by the Department of Agriculture and in the 1910 directory by the Forest Service. He traced two forest folios, the Zuni Folio of 1910 for District 3 and the Crater Folio of 1909 for District 6. **Regions 3 & 6**

Taylor, John B. Taylor, J. B. (Northern Region, Missoula, Montana) Taylor was a student attending the University of Montana in Missoula according to the 1909 and 1911 editions of the Missoula city directory. By the time the 1915/16 edition of the directory was published, Taylor's name was recorded as being a "Forest Ranger" with the Forest Service. He enlisted in the U.S. Army in 1917 and returned to Missoula as a "Grazing Examiner with the Forest Service after the war. Forest Service staff directories list him as being a "supervisor, range appraisal." He compiled three topographic maps of as many forests and two administrative maps for District 1. **Region 1**

Thomas, Anthony W. Anthony Thomas, A. W. T., Ā. (Region 10, Juneau, Alaska) Thomas worked for the Forest Service as a cartographer and map editor in its Alaska Regional Headquarters Office for nearly 50 years. He retired in the mid-1980s. Three maps of Alaska carry either his name, his initials, or his monogram: the Admiralty Island Recreation Area map of 1947, the Chugach National Forest map of 1951, and the Kenia Division of the Chugach National Forest of 1953.
Region 10

Thomas, Letty B. L.B.T. (Eastern Region, Washington, D.C.) Before joining the Forest Service as a cartographer, Thomas was employed as an "artist, colorist" with the Hicks Photo Finishers Company of Washington, D.C. The Forest Service staff *Directory* first includes her name in its November 1935 issue and perhaps by mistake, or possibly not, the Washington, D.C. city directories from 1935 to 1938 indicate that she was working for the U.S. Geological Survey as a draftsman. Washington, D.C. city directories from 1939 to 1941 list her name as being a draftsman with the Forest Service. Her one Forest Service map that carries her name is the one she revised in 1936 of the Allegheny National Forest. **Region 9**

Thompson, S. Marshall. S. M. T. (Washington Headquarters Office) Thompson's name can be found in the 1916, 1917, and 1918 editions of the Washington, D.C. city directories as being a "clerk" for the Forest Service. He traced the maps in the Manti Grazing Atlas of 1915, the Wallow Atlas Folio of 1917, and the proclamation diagram of the Alabama National Forest of 1918. **Regions 4, 6, & 8**

Thornton, Thomas O. T. O. Thornton. (Rocky Mountain Region, Denver, Colorado) Thornton began his drafting career with the Forest Service in 1938 and worked until 1941. After a being listed in the 1941 Denver Directory he disappears from its pages, which suggests wartime service, then returns to the directory in 1945 as an "Engineering Aid, USFS." After 1945

directories do not include his name. He compiled, drew, and revised four national forest maps for Region 2 between 1939 and 1940. **Region 2**

***Thorsen, O. T.** (Eastern Region, Milwaukee, Wisconsin or Washington, D.C.) This name did not appear in any of the Milwaukee city directories of the time. Thorsen's name is attached to only one map as the cartographer for, *Purchase Unit, Hiawatha, Southwest Addition*, which was approved National Forest Reservation Commission on September 30, 1936. **Region 9**

Tourjee, Perry M. P. Tourjee. (Pacific Southwest Region, San Francisco, California) Tourjee is first listed in the San Francisco city directory's 1940 edition as Perry M. Tourjee "with the U.S. Forest Service." He revised the Trinity National Forest map of 1940 which was reprinted in 1951. **Region 5**

Trembly, Guy T. G. T. Trembly, G. Trembly, G. T. T. (Washington Headquarters Office) With Ellen L. Mehurin, the most productive map tracer in the Washington Office, working first on tracing Proclamation diagrams and folio sheets beginning in 1907 then administrative maps for all Forest Service Regions, except for the Eastern and Alaska Regions, all the way to the mid-1930s with a 1935 map of Puerto Rico. In 1910 he was listed as a "draftsman" in the Washington, D.C. city directory. His production for each region is as follows: Region 1-21 maps; Region 2-9 maps; Region 3-4 maps; Region 4-14 maps; Region 5-3 maps; Region 6-12 maps; Region 8-7 maps. A remarkable record of 70 maps many of which were very early and important proclamation diagrams.

Tricker, Albert C. A.C.T. (Pacific Northwest Region, Portland, Oregon) 1932 is the first year that Tricker's name can be found in the Portland city directory with an occupation of "draftsman" but without an employer. This situation lasted until 1937 when Tricker is recorded in the city directory as being a draftsman for the U.S. Forest Service and continued to be so listed until the mid-1950s. He has only one map credit as the compiler for the 1940 map of the Umatilla National Forest (North Half). **Region 6**

Tripp, Homer F. Tripp, H. F. (Northern Region, Missoula, Montana) Listed as "Draftsman, Forest Service" in Polk's 1909 and 1911 Missoula city directories, but with only one credit as the compiler on the 1910 Bitterroot Folio. **Region 1**

Truscott, Charles J. C. J. Truscott. (Intermountain Region, Ogden, Utah) Truscott joined the Intermountain District in 1921 as a "ranger." The next year he is listed in the Forest Service Directory in the District's Engineering Division as in charge of "Entry Surveys." Ogden city directories after 1922 alternately list Truscott as a draftsman or as a surveyor, chief surveyor, or simply clerk. Listed as an "employee" of the Forest Service in 1935, Truscott took on the job title of "Topographic engineer" in 1938 and held that same title with Region Four until 1946. His name first appears on the 1928 map of the Toiyabe National Forest and was followed by 12 other maps and proclamation diagrams until his 1944 map of the LaSal National Forest. **Region 4**

Tuke, Clement H. C. H. Tuke. (Southwestern Region, Albuquerque, New Mexico) Tuke is listed in the city directory for Albuquerque for two years, 1924 and 1925, with an occupation of "draftsman, S.W. District, Forest Service." His one map credit was for the expertly designed 1924 forest visitor's map of the Tonto National Forest. **Region 3**

Tuxbury, George H. (Northern Region, Missoula, Montana) A longtime resident of Missoula, Tuxbury worked at the local Chevrolet dealership, Fisher-Kraabel Company before World War II, as a telegrapher during the war, and as a mechanic for the Western Amusement Company in Missoula repairing watches and small appliances, before becoming a draftsman with the Forest Service in 1956. Map credits tell us that he prepared small-scale maps for two forests in the late 1950s (Custer and Nezperce) and continued on the staff of the Northern Region's Division of Engineering as a draftsman well past the time when the Forest Service stopped the practice of adding the names of the cartographers to its maps. He retired from the Forest Service in 1986 as a highway engineer. **Region 1**

U

Udell, Stewart. S. Udell. (Intermountain Region, Ogden, Utah) Udell was hired on as a "draftsman" and "surveyor" by District 4 in 1925 and remained until 1927. He is not included in the Ogden city directories of 1928 and beyond. He compiled maps of the Challis and Uinta National Forests in 1927 and a proclamation diagram for the Uinta in 1929. **Region 4**

Uzefovich, Alexis M. A. M. Uzefovich. (Eastern Region, Washington, D.C) Uzefovich's first position as a draftsman was in 1932 when worked for the U.S. Shipping Board. In 1934 he then moved on to the U.S. Coast and Geodetic Survey and in 1936 to the Census Bureau. His last position as a draftsman in Washington, D.C. came in 1937 when the city directory indicates that he was employed by the U.S. Department of Agriculture. There are no other listings for him after 1937. The 1938 map of the Dry River Ranger District of the George Washington National Forest notes that Uzefovich "checked" the map. **Region 8**

V

***L. V.** (Southwestern Region, Albuquerque, New Mexico) This cartographer traced the 1930 forest visitor's map of the Lincoln National Forest. L.V. could have been based in Alamogordo, New Mexico, the headquarters of the Lincoln National Forest, but there are no city directories of the city published at this time that would allow confirmation. The name cannot be found in Albuquerque city directories. **Region 3**

Vanderford, Jay B. J. B. Vanderford, J.B.V. (Pacific Northwest Region, Portland, Oregon) Vanderford's first position with the Forest Service, North Pacific District, was that of a messenger, from 1923 to 1927. After an absence of over eight years, the 1935 Portland city directory includes his name as a "draftsman" with the US Forest Service and carried his name, occupation, and employer in these terms until well into the 1950s. His name appears on eight maps made between 1939 and 1942. The North Pacific (later Pacific Northwest) Region was the first to stop listing map-makers names on their maps, however, map revisions and reprints continued to list cartographers. The revised editions of Vanderford's maps all carried his name. **Region 6**

Venable, Richard M. R. M. Venable. (Northern Region, Missoula, Montana) Polk's 1955 edition of its Missoula city directory lists Venable's occupation as being an "engineer, U.S. Forest Service." The 1956 edition was the last year he was recorded as being a resident of Missoula and was listed as being a "student." His only map for the Forest Service was the 1954 revision of the Bob Marshall Wilderness map. **Region 1**

Vitali, Frank D. F. D. Vitali. (Pacific Southwest Region, San Francisco, California) Vitali began his career with the Forest Service in 1928 as a draftsman for the California District. San Francisco city directories from 1941 onward indicated that Vitali continued his drafting career with the Schmidt Lithograph Company of San Francisco. His name appears on 14 administrative, topographic and recreation maps made between 1934 and 1940 and their revisions.
Region 5

Vogel, George F. G. F. V. (Southern Region, Atlanta, Georgia) Vogel's map credits indicate he began work with the Southern Region in 1934. This start date is confirmed by his name being listed in the Atlanta city directory for the first time in 1935 and ending in 1939. The seven maps for which he is given credit are dated 1934 to 1938. **Region 8**

W

Waggaman, Josephine M. J. M. Waggaman, J. Waggaman, J. M. W. (Washington Headquarters Office) Waggaman made maps for all Districts beginning in 1912, including administrative, folio and grazing atlas sheets, and proclamation diagrams. The last of her 26 maps was the 1922 Executive Order map for the Dixie National Forest.

Wagner, Eugene. V. E. V. Wagner, E.V.W. (Northern Region, Missoula, Montana) As a draftsman for the Forest Service, Wagner was named on four small-scale recreation maps issued from 1937 to 1940. He can be found in the 1932 edition of Polk's Missoula city directory as being a student at the University of Montana and again in 1934 as a laborer. Only in the 1936 and 1938 editions of Polk's Missoula city directory can he be found listed as a "draftsman, U.S. Forest Service." **Region 1**

Walker, Daisy E. D. E. Walker. (Pacific Southwest Region, San Francisco, California) Daisy E. Walker began her career with the Forest Service's California District in 1914. Before 1914 she had worked the two previous years for the San Francisco office of the U.S. Geological Survey. She was not listed in the San Francisco city directories for the years 1915 through 1917. In 1918 her name reappeared as residing at 735 Taylor Street. She is named on 17 maps of California National Forests either as the compiler, tracer, or the person who revised the maps made between 1922 and 1928. "D.E. Walker" appears on the 1931 map of the Northern Redwood Purchase Unit as compiler long after she had left San Francisco. A possible explanation would be that in 1928 she compiled a map of the Klamath National Forest, the closest national forest to the Northern Redwood Purchase Unit, and her work was later incorporated into the 1931 map of the unit. City directories of San Francisco and Washington, D.C. indicate that she left San Francisco for the nation's capital in 1928 as her name could not be found in the 1928 edition of the San Francisco directory. The Washington, D.C. directory of 1928 lists her name, her

occupation as a "draftsman, but no employer. Between 1929 and 1932 she is alternately listed as working for the General Land Office and the Post Office Department, before finding a permanent position with the GLO. She is credited with the revising the Alaska (1935), Idaho (1939) and Nevada (1941) General Land Office state and territorial maps. **Region 5**

Washburn, Frank E. F. E. Washburn, Washburn, F.E.W. (Pacific Northwest Region, Portland, Oregon; Southwest Region, Albuquerque, New Mexico; Rocky Mountain Region, Denver, Colorado) For a regional cartographer, Washburn was one of the Forest Service's most prolific. He became the Chief of Drafting for the Rocky Mountain District in 1927, after leaving the North Pacific District where he had worked since 1921. Previous to 1921, he was a cartographer for the Southwestern District working in Albuquerque, New Mexico. Working in Albuquerque, he made 17 maps and proclamation diagrams primarily as the person who traced the maps. In Portland, he compiled, traced, and revised 18 maps. By 1949, Washburn's resume of maps for the Rocky Mountain Region totalled 65 maps for which he either compiled, edited, or checked, but did not revise or trace any of the 65. His name appears on 100 maps and many reprints. Washburn was employed by the Forest Service in Denver until 1957 when he became an engineer for Denver's City Board of Water Commissioners. His maps of the Michigan (1927) and Superior (1928) National Forests were made when these two forests were administered as part of the Rocky Mountain District. **Regions 2, 3, & 6**

Weitknecht, Robert H. Robt. H. Weitknecht. (Pacific Northwest Region, Portland, Oregon) Weitknecht is listed only once in the Portland city directory. In the 1917 edition, he is described as being a "forest ranger" with the U.S. Forest Service. Most likely he was living in Bend, Oregon, the Forest Supervisor's headquarters for the Deschutes National Forest at the time he compiled the 1915 map of the Deschutes. **Region 6**

Wernstedt, Lage. L. Wernstedt, L. W. (Pacific Northwest Region, Portland, Oregon) Wernstedt began his service on the Columbia National Forest, headquartered in Portland, Oregon, in 1916 as an "examiner" later moving to the District 6 Engineering Division in 1922. The Portland city directory for 1923 lists him as a "topographer" for the U.S. Forest Service and in the years following as an "examiner" until 1926. Wernstedt returned to the North Pacific Region in 1933 as a surveyor in the Engineering Division and finished his career with the Forest Service as an engineer. By 1943, the Portland Oregon city directory listed his name, but without occupation or employer, indicating that he probably had retired. He compiled five maps of Pacific Northwest forests between 1923 and 1931. **Region 6**

West, Vallum W. V. W. West, V. W. W. (Rocky Mountain Region, Denver, Colorado) West began as a "draftsman" for the Rocky Mountain Region in 1930 and worked through to 1941. Denver directories did not carry his name from 1942 until 1945 when he again was listed as a draftsman for the Forest Service. This gap indicates service in World War II. West was listed in the directories as a draftsman for the Forest Service until 1949, when he might have left the Denver area for the suburbs. His last map credit was for the 1963 *Trail Map of West Elk Wild Area.* West was a most productive cartographer with 23 map credits from 1931 to 1963. **Region 2**

White, Everett D. E. D. White. (Pacific Southwest Region, San Francisco, California) The San Francisco city directory first lists White in its 1954 edition as "with the U.S. Forest Service." He was instrumental in the production of 13 Class A, national forest maps for California forests at 1:126,720-scale in the 1950s. **Region 5**

Wilcox, Arthur R. A.R.W. (Pacific Northwest Region, Portland, Oregon, and Siuslaw National Forest, Corvallis, Oregon) In 1909 Wilcox was serving as the Assistant Forester on the Columbia National Forest in Washington state. The Portland city directories do not include his name after 1913. This was time he compiled the 1912 map of the Columbia National Forest. Wilcox was serving as Assistant Forester to Ralph S. Shelley, the supervisor of the Siuslaw National Forest, when the he compiled the 1937 administrative map for the Siuslaw National Forest (South Half). **Region 6**

Wilcox, C. F. C. Wilcox, C. F. W. (Pacific Southwest Region, San Francisco, California) The 1941 San Francisco city directory has Wilcox as being "with the U.S. Forest Service," but does not provide his or her full first and middle names or occupation. Four maps bear the Wilcox name made between 1939 and 1941, two administrative maps of whole forests (Angeles, 1941 & Plumas, 1939) and two forest visitor's maps (Mono, 1940 & Stanislaus, 1939). **Region 5**

Williams, Everett E. E. E. Williams, E. E. W. (Eastern Region, Washington, D.C.) Williams served as a draftsman for the Forest Service from 1936 to 1939. Williams is first listed in the 1937 edition of the Washington, D.C. city directory. His maps included administrative maps for the Green Mountain and the Monongahela National Forests, part of the modern day Eastern Region and for the Cumberland, George Washington, and Jefferson National Forests now part of the Southern Region, but at the time, part of the Eastern Region. **Regions 8 & 9**

***Williams, V.** V. Williams. (Northern Region, Missoula, Montana) Williams could not be found in Forest Service directories or in Polk's city directories of Missoula or of Washington, D.C. for this time period. His one map credit can be found on the map plates for the Blackfeet Forest Folio of 1918. **Region 1**

***Wilson, Neil.** (Pacific Southwest Region, San Francisco, California) Wilson's name could not be found in any directories of San Francisco matching the years of the maps for which he is credited as being the cartographer. Like Everett D. White, Wilson worked to make over a dozen Class A Forest Service administrative maps for California National Forests throughout the 1950s. **Region 5**

***Winbray, Dave.** (Southwestern Region and Southern Region; Duty station unknown) Winbray's name could not be found in the city directories for Albuquerque or Washington, D.C. for this time period. His 1912 map of the Sitgreaves National Forest indicates an affiliation with District 3. He is also credited as being the surveyor on the preliminary reconnaissance survey of the 1917 Wichita National Forest of Oklahoma. **Region 3 & 8**

Winkler, Everett C. E. C. Winkler, E. C. W. (Eastern Region, Milwaukee, Wisconsin) Winkler was first listed in the Milwaukee city directory of 1934 as being a draftsman for the U.S. Forest Service the same year he is first recorded as an employee of the Forest Service in the agency's *Directory.* Absent from the Milwaukee city directory from 1939 to 1943, he returned to the Forest Service as a draftsman in 1944 and worked into the early years of the 1950s. Of his 25 maps, 23 were of purchase units of the North Central Region. Besides purchase unit maps he compiled a regional map entitled, *National Forests of the North Central Region, Region Nine, 1937* and corrected the 1934 map of the Superior Natonal Forest. **Region 9**

Witherow, John M. J. M. W. (Washington Headquarters Office) Witherow started out in 1908 as a draftsman for the Department of Agriculture before moving to the Forest Service in 1912 and remained with the Forest Service until the early 1930s according the U.S. Forest Service Directories. However, his name appears on only one item, the Wallowa Folio of 1917. **Region 6**

Wood, William A. W. A. Wood. (Intermountain Region, Ogden, Utah) Wood first appears in the Ogden city directory in 1925 working for the Forest Service as a "draftsman." He remained only for a short time and received credit for only one map, that of the 1928 map of the Caribou National Forest. **Region 4**

***Woodard, Farrell, W.** (Northern Region, Missoula, Montana; Rocky Mountain Region, Denver, Colorado) Farrell W. Woodward could not be found in Forest Service directories or in city directories of the early1950s for either Missoula, Montana or Denver, Colorado. He might have been a contractor, like his fellow compilers, Frank D. Bates and Robert F. Jamieson given the task of compiling a map of the Beartooth Primitive Area in 1954. **Regions 1 & 2**

Y

Yule, James Blaine. J. B. Yule. Joined the Forest Service as a cartographer in 1911 in Missoula at age 27. His first map credit came in 1915 and with his engineering talents earned while enrolled at the University of Montana, Yule specialized in topographic map drawing. Yule is listed in city directories for Missoula, Montana first as a "Surveyor" (1915/15 edition), as a "Survey draftsman" (1917/18), and as a "civil engineer" (1922/23). His name is carried in Forest Service staff directories as being in charge of the Maps and Surveys Section of the Engineering Division of the Northern District a position he held until his retirement from the Forest Service in 1947. During World War II, Yule volunteered his cartographic skills to the war effort by transferring to the Forest Service's Bakersfield office. There, he made up to date topographic maps for the Army of the California Coast using aerial photography, a process for which he had long advocated. Yule died in 1957. **Region 1.**